Joint Transportation Committee

Long-Range Finances Final Report

Washington State Department of Transportation Ferries Division Financing Study II

Prepared For:
Joint Transportation Committee
Washington State Legislature

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EXECUTIVE SUMMARY

The 2007 Legislature directed the Joint Transportation Committee (JTC) to make recommendations regarding the Washington State Department of Transportation (WSDOT) Ferries Division (Ferries) capital financing strategies for consideration in the 2009 legislative session. The study was required to include: (1) confirming Ferries' estimate of future capital requirements based on a long-range capital plan; and (2) WSDOT's development of a plan for co-development and public-private partnerships at terminals.

This is the final report in a series that began with the January 2007 Phase I Ferry financing report. Phase I analyzed Ferries' 2006 long-range plan, identifying several issues with the planning and implementation. Following the Phase I report, the legislature enacted ESHB 2358, which incorporated a number of report recommendations directing Ferries to base its long-range capital plan on: (1) a revised ridership forecast; (2) a revised vehicle level of service standard; (3) operational and pricing strategies to fully utilize existing assets; and (4) revised terminal design standards. The 2007 Legislature also initiated Phase II of the Ferry Financing Study to resolve the issues identified in Phase I. That process produced recommendations incorporated in SSB 6932 in 2008.

This report is the final JTC report for the ferry financing phase II project. As directed it is a review of Ferries' long-range financing. That financing has two main components: revenue and expenditures. The legislature directed the Washington State Transportation Commission to evaluate Ferries' long-term revenues. That evaluation can be found in the Commission's *Ferry Funding Recommendations Final Report*, released March 2009. This report evaluates Ferries' projected expenditures.

This report is based on Ferries' *Revised Draft Long-Range Plan 2009-2030*, although the scope differs from the long-range plan. Ferries' plan covers the 22-year period from FY 2010 to FY 2031. The legislature adopts budgets biennially based on a 16-year financial plan. Because this is a report to the legislature, it is limited to the first 16 years of Ferries' draft plan: FY 2010 through FY 2025. Another difference is the absence of alternative scenarios. Ferries' plan included two scenarios. Scenario A continued the current service level with some marginal changes and keeps the State as the primary funder of the ferry system. Scenario B, recognizing that the State may not be able to fund Scenario A, provided for reduced services, and contemplated local funding of passenger-only ferry service. This report focuses on Scenario A.

This report includes:

- *Recommendations* for actions that the consultants believe the legislature should take, and
- *Alternatives*, which are actions the legislature could take that would reduce costs while preserving service levels.

I. FERRIES' REVISED DRAFT LONG-RANGE PLAN – SERVICE PROPOSAL SUMMARY

As directed by the legislature, the JTC has participated in and reviewed the underlying assumptions in Scenario A of Ferries' *Revised Draft Long-Range Plan.* For a more detailed discussion of the changes to those underlying assumptions that grew out of the Ferry financing study phase II process, see Appendix III.

A. Ridership Forecast – Risk Implications for Ferries' Long-Term Finances

In the 2005-07 biennium, fare revenues covered 77 percent of Ferries' operating expenses. Fare revenues are a function of ridership. Phase I of the ferry financing study identified issues with Ferries' ridership projections. Phase II included a forecasting workgroup that addressed those issues and reduced ridership growth projections by half.[1] Ferries now projects a 21 percent increase in system ridership over the next 16 years. This projection, along with assumed average fare increases of 2.5 percent per year, produces the future operating revenue assumptions in the long-range plan. Even the revised ridership projections are not without risk, however.

The forecast predicts a reversal in the downward trend of ridership, which has fallen 12 percent between the FY 2000 peak and FY 2008. While fare increases may have played a role in the decline, the Washington State Transportation Commission's market survey indicates fare increases may not be the primary reason. With the reasons for the decline unclear, projections of its reversal are uncertain.[2] Given the risk that projected ridership will not materialize, the consultants make the following recommendations:

- ***Recommendation #1.*** The legislature should monitor Ferry ridership.
- ***Recommendation #2.*** The legislature should consider funding a marketing initiative.
- ***Recommendation #3.*** The legislature should not plan on transfers from the operating budget to support the capital budget.

B. Revised Vehicle Level of Service Standard – Adopt Capacity Based Standard

The Ferry financing studies questioned Ferries' traditional boat wait vehicle level of service standard.[3] A boat wait standard encourages the delivery of service to meet peak period demand rather than offering a more balanced service, and more cost-efficient capital and operating costs. Ferries proposes to change its vehicle level of service standard from a boat wait to a percentage of sailings filled to capacity in the summer, spring, and winter standard. This will lead to a more cost-efficient balance of peak and non-peak service.

- ***Recommendation #4.*** The legislature should endorse Ferries' proposed percentage of sailings filled to capacity approach to vehicle level of service.

[1] Ferries' 2006 long-range plan predicted ridership growth of 68 percent by 2030 with existing service. The *Revised Draft Long-Range Plan* projects ridership growth of 36 percent by 2030.
[2] See *JTC Policy Work Group Status Report* in Appendix III for further information.
[3] Boat wait is the number of sailings a customer would miss due to capacity constraints before being able to board.

C. Operational and Pricing Strategies – Maximize Use of Current Resources

ESHB 2358 directed Ferries to develop operational and pricing strategies to better manage demand and make the most efficient use of current assets. Ferries reviewed numerous potential operational and pricing strategies and recommended two types: strategies to increase walk-on use of ferries through transit enhancements and fare incentives for foot-passengers; and strategies to level peak vehicle demand through no-surcharge vehicle reservations. Both strategies will help maximize the use of existing vessel capacity by using under-filled passenger capacity and non-peak auto capacity.

- ***Recommendation #5.*** The legislature should endorse Ferries' proposed operational and pricing strategies, including transit enhancements and fare incentives to increase walk-on use of ferries and no-surcharge vehicle reservations to level peak vehicle demand.
- ***Recommendation #6.*** The legislature should use the pre-design process[4] to more thoroughly review the implementation of Ferries' proposed transit enhancements and reservation strategies.

D. Scenario A Service Level

Scenario A maintains existing sailings on all routes,[5] increases vessel auto capacity on four (4) routes, and proposes to provide direct, rather than triangular service, between Fauntleroy–Vashon, Fauntleroy–Southworth, and Vashon–Southworth.

II. FERRIES' DRAFT LONG-RANGE PLAN – FINANCIAL SUMMARY

Both Ferries and the consultants agree that current revenue is not sufficient to fund Scenario A. The consultants' recommendations would produce a lower shortfall.

A. Ferries' Plan Projects $2.4 Billion 16-Year Funding Shortfall

Ferries projects Scenario A will have a 16-year capital funding shortfall of $2,188.8 million and an operations funding shortfall of $261.0 million. Based on the ridership forecast and assumed 2.5 percent annual fare increases, Scenario A has a farebox recovery rate of 80 percent.[6]

B. Consultants' Recommendations Reduce 16-Year Funding Shortfall to $0.65 Billion

The table below summarizes the consultants' recommendations, which would reduce the capital funding shortfall to $534.0 million, reduce the operations shortfall to $106.2 million, and increase farebox recovery to 83 percent. The additional options provided as

[4] The pre-design process is a decision-making tool for major capital budget expenditures. A pre-design study, which is required before the legislature appropriates design and construction funding, investigates alternatives and assesses which best solves a specific problem and at what cost. ESHB 2358 requires a pre-design process for all terminal improvement projects and for terminal preservation projects over $5.0 million.

[5] Scenario A service level includes restoration of full service to the Port Townsend route, which has been reduced to one-boat service since the retirement of the Steel Electric class of vessels in late 2007.

[6] Farebox recovery is the percentage of operations expenses that are covered by farebox and other associated revenues.

alternatives would reduce the capital shortfall to $142.9 million, produce an operations surplus of $13.7 million, and increase farebox recovery to 85 percent. The specific recommendations that produce the savings are discussed in more detail in the next sections.

Capital and Operations Funding 16-Year Summary

	Scenario A	Recommended	Change	Alternative (Cost Reductions)
Capital Plan				
Vessel Construction	1,473.8	514.0	-959.8	-313.0
Vessel Preservation	820.3	620.8	-199.5	-19.3
Vessel Improvement	60.9	53.7	-7.2	-1.0
Sub-total Vessels	*2,355.0*	*1,188.5*	*-1,166.5*	*-333.3*
Terminal Preservation	860.3	672.7	-187.6	-2.1
Terminal Improvement	390.9	165.0	-225.9	-55.7
Sub-total Terminals	*1,251.2*	*837.7*	*-413.5*	*-57.8*
Emergency Repairs	77.3	46.0	-31.3	
Administration & Indirect	225.4	181.9	-43.6	
Debt Service	212.1	212.1	0.0	
Total Capital Expenditures	4,121.0	2,466.2	-1,654.8	-391.1
Capital Revenues	1,932.2	1,932.2		
Funding Gap	-2,188.8	-534.0	1,654.8	-142.9
Fuel (Nov. forecast)	747.5	720.9	-26.6	
Fixed Vessel Costs	1,072.7	1,034.6	-38.1	-39.1
Variable Vessel Costs	1,125.2	1,119.2	-6.0	
Sub-total Vessels	*2,945.4*	*2,874.7*	*-70.7*	*-39.1*
Terminal Costs	*717.0*	*717.0*	*0.0*	
Management & Support Costs	*640.8*	*556.7*	*-84.1*	*-80.8*
Office of Financial Management Charges	0.8	0.8	0.0	
Marine Employees Commission Charges	4.1	4.1	0.0	
Sub-Total Outside Agency Charges	*4.9*	*4.9*	*0.0*	
Total Expenditures	4,308.1	4,153.3	-154.8	-119.9
Operations Revenues	4,047.1	4,047.1		
Funding Gap	-261.0	-106.2	154.8	13.7
Farebox Recovery	80%	83%		85%

III. CAPITAL RECOMMENDATIONS – 16-YEAR PLAN

A. Vessels

1. Refine Vessel Cost Inflation Assumptions

Future cost projections must account for inflation. Previously, Ferries has used WSDOT's Construction Cost Index of approximately 2 percent per year for all capital expenditures. The *Revised Draft Long-Range Plan* appropriately recognizes that shipbuilding and ship repair costs have risen faster than normal construction inflation and

uses a 4.7 percent per year inflation assumption based on the Bureau of Labor Statistics (BLS) Non-Military Shipbuilding Index. The BLS Non-Military Ship Repair Index (3.75 percent per year) is a more appropriate index for vessel preservation, improvement and emergency repair projects.[7]

- ***Recommendation #7.*** In developing a financial plan for Ferries, the legislature should recognize that shipyard costs are rising at a faster rate than the general rate of construction inflation reflected in the WSDOT Construction Cost Index.
- ***Recommendation #8.*** The legislature should use the Bureau of Labor Statistics indexes for non-military ship construction and non-military ship repair for those portions of the vessel and emergency repair capital program that are for work done in commercial shipyards, and the WSDOT Construction Cost Index for staff and consultant costs.

2. New Vessel Construction – $959.8 Million Recommended Savings

The consultants have concluded that Ferries' vessel replacement plan: adds one extra vessel to provide direct service on the Fauntleroy–Vashon–Southworth route unnecessarily; replaces vessels before they reach their planned retirement age; and deploys larger vessels than needed on certain routes. The consultants' $959.8 million recommended savings over the 16-year planning horizon are a result of building fewer (5 rather than 9) and smaller (4 small vessels and 1 large vessel rather than 3 small vessels and 6 large vessels) vessels.

a. Recommendations:

- ***Service Level:*** To maintain current service levels, the consultants recommend the following.
  - ***Recommendation #9.*** Ferries' Scenario A plan for a 22-vessel fleet to provide current service levels should be endorsed by the legislature.
  - ***Recommendation #10.*** The legislature should not approve the Scenario A plan to add an additional vessel to the fleet to provide a fourth vessel on the Fauntleroy–Vashon–Southworth route. Ferries should either continue the triangle service or provide more direct service with the three vessels assigned to the route.
- ***Vessel Acquisition and Deployment:*** The JTC's *Vessel Sizing and Timing Final Report,* April 2009, recommended that vessel acquisition be tied to the fleet's retirement schedule. The legislature should provide funding to retire the *Rhododendron* and *Evergreen State*, the two vessels in the fleet in most urgent need of retirement, and retire other vessels when due instead of early. In addition, the legislature should provide funding to restore full two-vessel service to Port Townsend and stop leasing the Steilacoom II from Pierce County.

[7] The ship repair index is lower than the shipbuilding index because a higher percentage of repair work is labor versus commodities such as copper and steel that have experienced higher annual cost increases.

- ***Recommendation #11.*** The legislature should fund the acquisition of five (5) new vessels in the 16-year financial plan period: four (4) small (64-auto Island Home class vessels) and one (1) large (144-auto) vessel.
- ***Recommendation #12.*** The legislature should provide funding to acquire four new small vessels (64-auto Island Home class) in the 2010-2013 biennia and funding to construct a new large (144-auto) vessel in the 2023-25 biennium.
- ***Recommendation #13.*** The legislature's 16-year financial plan should assume the following deployments by 2025: Bainbridge–Bremerton routes four (4) vessels, including two (2) jumbo, one (1) large, and one (1) medium; Clinton two (2) medium vessels; Kingston two (2) jumbo vessels; Point Defiance one (1) small vessel; Port Townsend two (2) small vessels; San Juans and Sidney routes five (5) vessels, including three (3) large, one (1) medium, and one (1) small (summer); and the Fauntleroy–Southworth–Vashon Triangle route three (3) vessels, including one (1) medium and two (2) mid-size.

b. Alternatives: Although the consultants do not recommend the following options, the legislature may want to consider the following additional cost cutting measures:

- Consider eliminating the need to build one (1) new small vessel by deploying only one vessel on the Port Townsend route in the shoulder and summer seasons, which is the service that has been provided since the retirement of the Steel Electric class vessels in 2007.
- Consider eliminating the need to build one (1) large vessel in the 2023-25 biennium by either: consolidating Sidney service with other San Juan service; purchasing a used foreign flagged vessel for the Sidney service; or re-building a Super class (144-auto) vessel.

3. Vessel Preservation – $199.5 Million Recommended Savings

The consultants recommend a reduction of $199.5 million in vessel preservation. This reduction is partially the result of constructing fewer and smaller vessels, and operating a 22- rather than a 23-vessel fleet.

- ***Constructability and delivery:*** Ferries significantly underspent the appropriated vessel preservation budget in the 2005-07 and 2007-09 biennia. This was due to vessel emergencies and because Ferries' capital plan does not consider the number of vessels out of service at one time.
  - ***Recommendation #14.*** Vessel preservation planning should consider out-of-service time and incorporate a review of whether the program can be constructed and delivered as planned.
  - ***Recommendation #15.*** The legislature should reduce the vessel preservation program by 15 percent in the 16-year plan, pending a constructability and delivery review.

- ***Out-of-service time:*** As discussed in the two prior JTC vessel studies,[8] reducing planned out-of-service time from the current average of seven weeks per year per vessel to six by 2030 will help stabilize service and reduce the number of vessels needed to deliver service.
    - ***Recommendation #16.*** Ferries should aggressively pursue reducing out-of-service time, and the legislature should give priority to funding such reductions.
    - ***Recommendation #17.*** Ferries should consider ways to reduce out-of-service time associated with Eagle Harbor Repair and Maintenance Facility vessel work, including the potential for double shifts.
    - ***Recommendation #18.*** In developing its 16-year financial plan, the legislature should assume that topside painting will occur every 10 years and request Ferries to review whether passenger space renovations are necessary every 12 years on all routes.
    - ***Recommendation #19.*** The legislature should increase funding for topside painting projects by 30 percent in order to permit funding of an accelerated painting schedule to reduce project out-of-service time.

- ***Retirement schedule:*** Prior JTC vessel studies recommended a cost-benefit analysis of extending the life of the Super class (144-auto) *Hyak* by rebuilding rather than retiring her in the 2010-15 time period. Ferries' long-range plan adopted this recommendation and now plans to retire the *Hyak* in 2031.
    - ***Recommendation #20.*** The legislature should increase funding for the *Hyak* renovation to rebuild its motor for use in other Super class ferries if needed in order to reduce out-of-service time.
    - ***Recommendation #21.*** The legislature should not provide preservation funding for the *Evergreen State* or the *Rhododendron*, but rather allow the Certificates of Inspection for these vessels to lapse.

4. Vessel Improvement – $7.2 Million Recommended Reduction

Constructing fewer and smaller vessels (recommendations 11, 12, 13) and operating a 22- rather than a 23-vessel fleet (recommendations 9, 10) also allows a $7.2 million reduction in vessel improvement costs over 16 years. The vessel improvement budget is largely a reserve for future improvements that may be necessary to meet U.S. Coast Guard or Clean Air Act regulatory requirements.

- ***Recommendation #22.*** The legislature should fund the fuel efficiency improvement on one of the Super class ferries in addition to the re-build of the *Hyak* (which will include a new propulsion engine) to minimize out-of-service time and to determine whether the modification is cost-effective.

[8] *Auto-Passenger Vessel Preservation and Replacement*, January 2008 and *Vessel Sizing and Timing Final Report*, April 2009.

- ***Recommendation #23.*** The legislature should not fund the fuel efficiency project proposed for the Issaquah class ferries because waste heat recovery has not proven to be a cost-effective fuel conservation investment.
- ***Recommendation #24.*** The legislature should appropriate $50,000 for an analysis of the steering gear ventilation requirements for the Jumbo Mark II and Jumbo Mark I vessels rather than the $1.0 million included in Scenario A in order to ensure legislative understanding of the costs and benefits associated with the proposed solution.

5. Vessel Capital Policy

Vessel planning improvements would reduce costs further.

- ***Pre-design.*** The pre-design process would provide the legislature with an opportunity to review assumptions and cost estimates for new vessels, and the costs and benefits of vessel improvements and preservation projects, before appropriating design and construction funds. ESHB 2358 requires a pre-design process for terminal improvement projects and for terminal preservation projects over $5.0 million.
    - ***Recommendation #25:*** The legislature should require a pre-design report for vessel construction and improvement projects and for vessel preservation projects over $5.0 million.
    - ***Recommendation #26.*** The legislature should require as part of the pre-design process for new vessel construction a projection of out-of-service time and a life-cycle cost analysis of alternatives that would reduce planned out-of-service time. The life-cycle cost analysis should consider the impact on fleet size.
- ***New Vessel Construction Management and Design.*** The JTC's *Capital Program Staffing and Administration Final Report*, April 2008, recommended that Ferries review its engineering divisions to ensure core competency and a focus on vessel preservation. The corollary of this recommendation is that Ferries should not focus its staff on new vessel construction.
    - ***Recommendation #27.*** Ferries and the legislature should consider existing designs prior to launching new designs for vessels, consider third party management of new vessel design and construction, and ensure that the design-build process is integrated with the pre-design report process and used effectively to expedite vessel design and construction at minimum cost to the state.

B. Terminals

1. Terminal Cost Estimating Overstates Costs

WSDOT and Ferries' policy requires bringing projects in under- or on-budget. This policy may have produced the unintended result of systemic over-estimating of project costs.

After reviewing a number of cost estimates,[9] the consultants found consistent cost overstatement because Ferries uses excessive percentage allowances for preliminary engineering, construction engineering, and contingencies. Budgeted amounts also exceed the scope estimates because projects that would logically be done together are separately budgeted.

- ***Recommendation #28.*** Ferries should revise its terminal cost estimating procedures to provide more consistent and tighter cost estimating, including an internal control to ensure that unit prices and the application of design and other allowances are reasonable.
- ***Recommendation #29.*** Ferries should revise its budget development process to ensure that: terminal sub-projects are reviewed for constructability, with cost reductions for combining WINS into single construction projects incorporated in the capital 16-year plan; and that the capital budget reflects the scoping estimates.
- ***Recommendation #30.*** Ferries should revise its capital construction performance goals to encourage the development of reasonable project cost estimates.

2. Terminal Preservation – $187.6 Million Recommended Savings

The consultants recommend a $187.6 million reduction in terminal preservation funding, which includes the $140.0 million reduction from the consultants' revisions to the preservation WINS.

The terminal life cycle cost model divides terminal assets into two categories, the second of which (Category 2) includes assets that are less critical to terminal operations, such as tie-up slips and upland assets. Ferries' performance goal for terminal Category 2 assets is a preservation needs percentage (PNP)[10] of 20 percent to 40 percent. Under Scenario A, at the end of the 16-year financial plan, the PNP would be 6 percent, which indicates an over investment in Category 2 preservation.

- ***Recommendation #31.*** The legislature should approve project funding at a level consistent with the revised cost estimates for the 22 terminal preservation WINS reviewed by the consultants.
- ***Recommendation #32.*** The legislature should reduce Category 2 terminal preservation funding in order to bring the 16-year plan closer to the performance goal for these assets, by reducing lower priority Category 2 investments, reducing the uplands paving program by 50 percent, and by not preserving the passenger-only vessel facilities at Eagle Harbor.

[9] The consultants reviewed 22 cost estimates for terminal preservation sub-projects or WINS (work order identification numbers) and 22 terminal improvement WINS. Of the 22 improvement WINS, 20 were for terminal security improvement projects.

[10] Preservation needs percentage is the percentage of systems that are not preserved within the projected replacement period.

3. Terminal Improvements – $225.9 Million Recommended Savings

The consultants recommend a $225.9 million reduction in terminal improvement funding, including changes from the consultants' revisions to the terminal improvement WINS.

a. Recommendations

- ***Programmatic improvements.*** Programmatic improvements occur at a number of terminals and include stormwater, reservations, seismic, phone, emergency generators, smart card, and ADA improvements. Prior to 2008 it was difficult to analyze these improvements because the costs were included in systemwide projects. ESHB 2358 required systemwide project costs to be allocated to specific terminals for greater transparency. Specific recommendations for changes to Ferries' planned programmatic improvements are:
    - ***Recommendation #33.*** The legislature should not fund the stormwater improvements program, but rather provide funding for stormwater projects as part of the funding of terminal preservation or improvement projects.
    - ***Recommendation #34.*** The legislature should include in its 16-year plan funding for Ferries' revised reservation program.
    - ***Recommendation #35.*** The legislature should decrease funding for terminal security improvements to Ferries' revised level.
    - ***Recommendation #36.*** The legislature should increase funding for terminal seismic improvements to provide a placeholder for additional improvements resulting from Ferries' ongoing seismic surveys.
    - ***Recommendation #37.*** The legislature should not fund emergency generators at small terminals where minimal revenue is at risk during power outages, instead continuing to rely on vessel shore power during landside power outages.

- ***Dwell time improvements.*** Dwell time improvements are intended to reduce the time it takes to load and unload vessels as ridership grows. As discussed in recommendations 1, 2 and 3, future ridership growth is uncertain.
    - ***Recommendation #38.*** The legislature should not fund dwell time improvements until the impact of operational and pricing strategies on ridership is known.

- ***Transit enhancements.*** The legislature should endorse Ferries' proposal to encourage greater transit use. However, funding decisions should be based on changes in ridership patterns and the availability of local transit service opportunities.
    - ***Recommendation #39.*** The legislature should not fund transit capital improvements at terminals until the impact of operational and pricing strategies on walk-on ridership is known and until the availability of transit service is assessed.

Terminal Relocation and Replacement. The relocation of the Mukilteo terminal, which includes bow loading for expedited loading and unloading, is the largest terminal improvement project in Scenario A at $138.1 million,. A January 2008 Ferries analysis of alternatives for the Mukilteo terminal[11] notes that bow loading is a requirement for three (3) vessel service on the route. Two (2) vessel service is proposed for the Mukilteo route in Scenario A. The consultants also reviewed the cost estimate for the Mukilteo terminal and concluded that, without bow loading, the terminal relocation project should cost $91.8 million rather than $138.1 million. The consultants also identified other non-essential improvement projects.

- ***Recommendation #40.*** The legislature should provide funding for the relocation of the Mukilteo terminal without bow loading.
- ***Recommendation #41.*** The legislature should not fund non-essential terminal improvement projects at Anacortes and Lopez,[12] and should move superfund site monitoring at Eagle Harbor to the operations budget.

b. Alternatives

Although not recommended by the consultants, the legislature may want to consider the following additional cost cutting measures. The Mukilteo terminal could be preserved at its existing location rather than being re-located, which would save $28.3 million. Preserving the Anacortes terminal by re-roofing it rather than re-building it would save $26.6 million.

4. Terminal Policy Recommendations

- ***Joint Development Opportunities.*** Ferries' terminals represent valuable real estate that could produce revenue through the use of joint development opportunities.
  - ***Recommendation #42.*** The legislature should endorse the findings of the *Analysis of Joint Development Opportunities at Washington State Ferry Terminals: Final Report* and provide funding for WSDOT to pursue the identified development opportunities.
- ***Terminal Project Management.*** Major terminal projects require specialized skills for management and delivery. Because of their relative infrequency, it may not be cost-effective to develop that expertise within Ferries.
  - ***Recommendation #43.*** The legislature and Ferries should consider third party management of major terminal projects, defined as those that exceed $50.0 million.

[11] *Mukilteo Multimodal Ferry Terminal Cost Reduction Alternative Option Development (Draft),* January 17, 2008.

[12] The Anacortes projects are a sign bridge and improvements to the concession storage building, and the Lopez project is an exit walkway.

5. Emergency Repairs – $31.3 Million Recommended Savings

The *Evergreen State* and *Rhododendron*, the vessels in the fleet that have the most emergency repairs, will retire at the end of the 2009-11 biennium (recommendation 21). These retirements should greatly reduce the need for emergency repair funding.

- ***Recommendation #44.*** The legislature should plan on emergency repair funding in the 2009-11 biennium that would equal the projected 2007-09 level for non-retired vessels and terminals, and adjust funding levels in anticipation of the retirement of the *Rhododendron* and the *Evergreen State* at the end of the 2009-11 biennium.

6. Administration and Indirect Costs – $43.6 Million Recommended Savings

The consultants recommend a total reduction in administration and indirect capital costs of $43.6 million. Of this $43.6 million, $3.3 million is a reduction in administration, $9.6 million is a reduction in vessel indirect costs, and $30.7 million is a reduction in terminal indirect costs.

- ***Calculation of administration and indirect costs***. The consultants found that Ferries, in developing its administration and indirect cost budgets, had not adjusted carry-forward amounts for one-time expenses (i.e., costs that occur during the 2009-11 biennium but should not re-occur) and had included some specific terminal or vessel project costs.
    - ***Recommendation #45.*** The legislature should adjust carry-forward amounts for one-time expenses in the administration and indirect support costs when developing its 16-year financial plan.
    - ***Recommendation #46.*** The legislature should not fund specific terminal or vessel costs as part of administration and indirect costs, but rather accommodate those costs within terminal and vessel projects.

- ***Administration.*** These costs are for legal, budget, human resources, accounting, planning, and communications. The consultants found that the financial plan included carry-forward of one-time costs, and identified some further opportunities for cost reductions.
    - ***Recommendation #47.*** The legislature should plan on capital administration costs of $96.4 million in developing its 16-year financial plan, a reduction of $3.3 million from Scenario A.

- ***Terminal Indirect Costs.*** These costs are for project controls, technical support, planning and design standards, engineering studies, regulatory compliance, and administration and office support. The consultants found that terminal indirect costs are a much higher percentage of terminal capital costs (7 percent) than vessel indirect costs are of vessel capital costs (3 percent). The higher terminal indirect costs are in part because terminals has a project controls section, which

has expertise that could be shared with vessels, and because terminals is carrying a large budget for implementation of the WSDOT Project Management and Report System.

  - ***Recommendation #48.*** The legislature should allocate project control section staff costs between vessel and terminal indirect costs when developing its 16-year financial plan.
  - ***Recommendation #49.*** The legislature should not fund implementation of the WSDOT Project Management Reporting System in Ferries.
  - ***Recommendation #50.*** The legislature should plan on terminal indirect costs of $55.7 million in developing its 16-year financial plan, a reduction of $30.7 million from Scenario A.

- ***Vessel Indirect Costs.*** These costs are for life cycle cost model support, environmental studies, planning and design, technical support, noise control, and administration and office support. Vessel indirect costs are increased by transferring half the terminal project controls staff budget. This increase is offset by other reductions, the largest of which are in vessel planning and design, environmental studies, noise control abatement, supervision and office support, and implementation of the life cycle cost model.
  - ***Recommendation #51.*** The legislature should plan on vessel indirect costs of $29.7 million over its 16-year financial plan, a reduction of $9.6 million from Scenario A.

IV. OPERATIONS RECOMMENDATIONS – 16-YEAR PLAN

A. Vessel Operations – $70.7 Million Recommended Savings

The consultants recommend a reduction of $70.7 million in the vessel operations budget. Most of this reduction is the result of building fewer and smaller vessels, and deploying smaller vessels on some routes.

- ***Fuel.*** Ferries' financial stability has been impacted by volatility in fuel prices. Managing fuel costs is critical for managing operations costs. Ferries is working to implement the JTC's *Vessel Sizing and Timing Final Report* recommendation to slow vessels by 0.5 knot to 1.0 knot to conserve fuel.
  - ***Recommendation #52.*** The legislature in developing its 16-year financial plan should assume fuel conservation savings from slowing vessels on average 0.5 knot in the summer and 0.75 knot the rest of the year.
  - ***Recommendation #53.*** The legislature should endorse the concept of a fuel surcharge to stabilize Ferries' operations finances provided that Ferries provides the legislature with a plan for determining and applying the surcharge, and that Ferries reviews operational strategies to reduce fuel consumption before applying the surcharge.

B. Management and Support Costs – $84.1 Million Recommended Savings

Management and support costs in Scenario A were based on the 2007 route statement. The 2007 route statement did not include: policy changes regarding charging other WSDOT program expenses to Ferries (specifically Executive Management and Information Technology), nor total staffing costs. Basing credit card fee charges and fleet insurance costs on the 2007 route statement meant that these costs were not properly adjusted for revenue and fleet changes. Ferries' proposed management and support budget also included the total cost for implementation of a reservation system in the 2009-11 biennium, before the system will be fully operational, and other WSDOT expenses that will not be charged to Ferries.

- **Recommendation**
  - ***Recommendation #54.*** The legislature should adopt the policy proposed in the Governor's 2009-11 biennium budget of not charging the Puget Sound Ferry Operations Account for expenses incurred by WSDOT Executive Management (Program S) and Information Technology Services (Program C).

- **Alternative**

  The JTC's *Management and Support Costs Final Report* recommended reconsideration of the marine insurance program. The legislature could consider eliminating the property coverages, which would save $90.1 million. The legislature could also consider funding a marketing program, which the consultants estimate would cost $9.3 million or 0.3 percent of projected farebox revenue over the 16-year financial plan period.

V. RECOMMENDED FINANCIAL POLICIES

- ***Vessel Replacement Reserve.*** The timely replacement of vessels as they come due for retirement is critical to the provision of stable service and is the biggest financial challenge faced by Ferries. Under the recommended financial plan, commencing with the 2023-2025 biennium, Ferries will need to build six (6) 144-auto passenger vessels to replace the retiring Evergreen State class and Super class vessels. Following these replacements Ferries will need to replace the two Jumbo Mark I class vessels (188-auto) and six Issaquah class vessels (124-auto/Sealth 90-auto) between 2031 and 2045. A vessel replacement reserve fund would set aside funding to replace vessels and stabilize Ferries' finances.
  - ***Recommendation #55.*** The legislature should consider the establishment of a vessel replacement fund that would set aside funds for the periodic replacement of vessels.

- ***Zero Base Operations Budget.*** The State usually uses incremental budgeting for operations, i.e., starting with the last budget as a base, to develop future budgets. This approach has become very complex for Ferries because of the changes in fleet composition.

- ***Recommendation #56.*** The legislature should request a zero-based Ferries operations budget for the 2011-13 biennium.

- ***Farebox Recovery.*** Farebox recovery is a key indicator in setting ferry fares and is often used to compare Ferries' performance to that of other transit agencies. It is, therefore, important that the legislature and the public have a clear understanding of what is included and excluded as costs in the farebox recovery calculation.
  - ***Recommendation #57.*** The legislature should establish its intent to have farebox recovery calculated on a consistent basis, including only costs charged to the Puget Sound Ferry Operations Account and including all such costs (i.e. Marine Employee Commission and OFM charges) unless specifically excluded by the legislature.

Summary of Recommendations

	Area	Recommendation	WSDOT Ferries Division Response
Revised Draft Long Range Plan Responses to ESHB 2358	Ridership Forecast	1. The legislature should monitor Ferry ridership.	1. Concur
		2. The legislature should consider funding a marketing initiative.	2. Concur
		3. The legislature should not plan on transfers from the operating budget to support the capital budget.	3. Concur
	Vehicle Level of Service Standard	4. The legislature should endorse Ferries' proposed percentage of sailings filled to capacity approach to vehicle level of service.	4. Concur
	Operational and Pricing Strategies	5. The legislature should endorse Ferries' proposed operational and pricing strategies, including transit enhancements and fare incentives to increase walk-on use of ferries and no-surcharge vehicle reservations to level peak vehicle demand.	5. Concur
		6. The legislature should use the pre-design process to more thoroughly review the implementation of Ferries' proposed transit enhancements and reservation strategies.	6. Concur. We agree that a careful predesign study is critical to the success of the reservation system. We will work with OFM on an appropriate scope for pre-design.
16-Year Capital Plan	Vessel Cost Inflation Assumptions	7. In developing a financial plan for Ferries, the legislature should recognize that shipyard costs are rising at a faster rate than the general rate of construction inflation reflected in the WSDOT Construction Cost Index.	7. Concur
		8. The legislature should use the Bureau of Labor Statistics indexes for non-military ship construction and non-military ship repair for those portions of the vessel and emergency repair capital program that are for work done in commercial shipyards, and the WSDOT Construction Cost Index for staff and consultant costs.	8. Concur
	New Vessel Construction and Deployment	9. Ferries' Scenario A plan for a 22-vessel fleet to provide current service levels should be endorsed by the legislature.	9. Concur. 22 vessel fleet is critical to support existing service levels.
		10. The legislature should not approve the Scenario A plan to add an additional vessel to the fleet to provide a fourth	10. Concur

	Area	Recommendation	WSDOT Ferries Division Response
16-Year Capital Plan		vessel on the Fauntleroy-Vashon-Southworth route. Ferries should either continue the triangle service or provide more direct service with the three vessels assigned to the route.	
		11. The legislature should fund the acquisition of five (5) new vessels in the 16-year financial plan period: four (4) small (64-auto Island Home class vessels) and one (1) large (144-auto) vessel.	11. Do not concur. Agree with number of vessels, but not allocation of vessels. WSF preference is 3, 64-car ferries and 2, 144-car ferries.
		12. The legislature should provide funding to acquire four new small vessels (64-auto Island Home class) in the 2010-2013 biennia and funding to construct a new large (144-auto) vessel in the 2023-25 biennium.	12. Do not concur. Regarding timing of vessel procurement, WSF preference is for 5 new vessels to be acquired in the next six years or not later than 8 years.
		13. The legislature's 16-year financial plan should assume the following deployments by 2025: Bainbridge-Bremerton routes four (4) vessels, including two (2) jumbo, one (1) large and one (1) medium; Clinton two (2) medium vessels; Kingston two (2) jumbo vessels; Point Defiance one (1) small vessel; Port Townsend two (2) small vessels; San Juans and Sidney routes five (5) vessels, including three (3) large, one (1) medium, and one (1) small (summer); and the Fauntleroy-Southworth-Vashon Triangle route three (3) vessels, including one (1) medium and two (2) mid-size.	13. Do not concur. WSF's preferred 2025 vessel deployment differs in the following: For the Bainbridge-Bremerton route combination two (2) jumbo and two (2) large; Clinton one (1) large and one (1) medium; San Juans and Sidney four (4) large and one (1) mid-size (summer); and the Fauntleroy-Vashon-Southworth triangle route three (3) medium summer and two (2) medium and one (1) mid-size fall/winter/ spring.
	Vessel Preservation	14. Vessel preservation planning should consider out-of-service time and incorporate a review of whether the program can be constructed and delivered as planned.	14. Concur
		15. The legislature should reduce the vessel preservation program by 15 percent in the 16-year plan, pending a constructability and delivery review.	15. Do not concur. We agree that the vessel preservation program needs to be updated and reviewed for constructability. We do not concur with reducing the program unless this is warranted at the conclusion of the review. Some of the older vessels, particularly the Supers, are becoming more difficult to maintain, and we will need preservation funds to keep

	Area	Recommendation	WSDOT Ferries Division Response
16-Year Capital Plan			the fleet in service.
		16. Ferries should aggressively pursue reducing out-of-service time, and the legislature should give priority to funding such reductions.	16. In general, WSF concurs that a focus should be placed on reducing out of service time in conducting preservation including revisiting the periodicity of topside painting and renovating passenger areas. However, it may not be practical to work double shifts at Eagle Harbor; not only from a cost perspective, but also from the perspective of impacting the neighborhood community with the noise and light associated with ship maintenance. Finally, out of service time is also affected by external influences such as regulatory mandates and unplanned vessel repairs.
		17. Ferries should consider ways to reduce out-of-service time associated with Eagle Harbor Repair and Maintenance Facility vessel work, including the potential for double shifts.	17. WSF agrees that efforts should be made to reduce out of service time. WSF has been making efforts to use Eagle Harbor crews for maintenance activities during vessel preservation work periods in commercial yards. This has begun to reduce the amount of time vessels spend in Eagle Harbor. However, we believe the addition of a double shift or evening work at Eagle Harbor would be problematic and result in significant community impacts since the maintenance facility is located in a neighborhood setting.
		18. In developing its 16-year financial plan, the legislature should assume that topside painting will occur every 10 years and request Ferries to review whether passenger space renovations are necessary every 12 years on all routes.	18. Concur
		19. The legislature should increase funding for topside painting projects by 30 percent in order to permit funding of an accelerated painting schedule to reduce project out-of-service time.	19. Concur. Accelerated painting schedules can be achieved subject to shipyard availability, the shipyard's subcontractors ability to double/triple shifts, and time of year/weather conditions.
		20. The legislature should increase funding for the Hyak renovation to rebuild its motor for use in other Super class ferries if needed in order to reduce out-of-service time.	20. Concur

	Area	Recommendation	WSDOT Ferries Division Response
16-Year Capital Plan		21. The legislature should not provide preservation funding for the *Evergreen State* or the *Rhododendron*, but rather allow the Certificates of Inspection for these vessels to lapse.	21. If the vessel procurement plan provides for 5 boats within eight years, we concur realizing the *M.V. Evergreen State* will need to remain in service until the first 144 is delivered and some minimal funding will be necessary to keep it fully operational. If not (such as the CRG recommendation for 4 64's in the near future and 144s later), do not concur. *M.V. Hiyu* is inadequate as a stand by vessel necessitating keeping *Evergreen State* fully maintained and preserved as a standby until the first 144 is delivered.
	Vessel Improvement	22. The legislature should fund the fuel efficiency improvement on one of the Super class ferries in addition to the re-build of the *Hyak* (which will include a new propulsion engine) to minimize out-of-service time and to determine whether the modification is cost-effective.	22. Concur
		23. The legislature should not fund the fuel efficiency project proposed for the Issaquah class ferries because waste heat recovery has not proven to be a cost-effective fuel conservation investment.	23. Do not concur. Waste heat recovery is a viable fuel consumption reduction methodology with an estimated payback of 5 years in this case. Recommend a pilot on one Issaquah class vessel to validate the concept.
		24. The legislature should appropriate $50,000 for an analysis of the steering gear ventilation requirements for the Jumbo Mark II and Jumbo Mark I vessels rather than the $1.0 million included in Scenario A in order to ensure legislative understanding of the costs and benefits associated with the proposed solution.	24. Concur
	Vessel Policy	25. The legislature should require a pre-design report for vessel construction and improvement projects and for vessel preservation projects over $5.0 million.	25. Do not concur. Concur with the value of completing pre-design studies for construction, preservation, and improvement projects. However, the thresholds should be revised to: 1) All new construction; 2) $15.0 million for major renovations (preservation); and 3) Improvements $5 million for complete programs (not on vessel by vessel basis). For improvements mandated by regulatory agencies, only an

	Area	Recommendation	WSDOT Ferries Division Response
16-Year Capital Plan			appropriately scaled pre-design study should be necessary.
		26. The legislature should require as part of the pre-design process for new vessel construction a projection of out-of-service time and a life-cycle cost analysis of alternatives that would reduce planned out-of-service time. The life-cycle cost analysis should consider the impact on fleet size.	26. Concur
		27. Ferries and the legislature should consider existing designs prior to launching new designs for vessels, consider third party management of new vessel design and construction, and ensure that the design-build process is integrated with the pre-design report process and used effectively to expedite vessel design and construction at minimum cost to the state.	27. Concur with considering existing designs before starting a new design for new ferries and ensuring the design build process is integrated with the pre-design report. Do not concur with recommendation to employ third party vessel construction management. Believe it adds costs while reducing the probability of delivering vessels that fully meet state requirements.
	Terminal Cost Estimating	28. Ferries should revise its terminal cost estimating procedures to provide more consistent and tighter cost estimating, including an internal control to ensure that unit prices and the application of design and other allowances are reasonable.	28. Concur. Working on improvements.
		29. Ferries should revise its budget development process to ensure that: terminal sub-projects are reviewed for constructability, with cost reductions for combining WINS into single construction projects incorporated in the capital 16-year plan; and that the capital budget reflects the scoping estimates.	29. Concur
		30. Ferries should revise its capital construction performance goals to encourage the development of reasonable project cost estimates.	30. Concur. The Asset Management program will revise performance goals.
		31. The legislature should approve project funding at a level consistent with the revised cost estimates for the 22 terminal preservation WINs reviewed by the consultants.	31. No response.

	Area	Recommendation	WSDOT Ferries Division Response
16-Year Capital Plan	Terminal Preservation	32. The legislature should reduce Category 2 terminal preservation funding in order to bring the 16-year plan closer to the performance goal for these assets, by reducing lower priority Category 2 investments, reducing the uplands paving program by 50 percent, and by not preserving the passenger-only vessel facilities at Eagle Harbor.	32. Concur
	Terminal Improvements	33. The legislature should not fund the stormwater improvements program, but rather provide funding for stormwater projects as part of the funding of terminal preservation or improvement projects.	33. Do not concur. The completed "improvements" study would develop scoping level designs and estimates for implementation of stormwater best management practices (BMPs) at each terminal so that WSF can achieve compliance with the Federal Clean Water Act and State Water Quality Laws (RCS 90.48, WAC 173-201A, and WAC 173-270).
		34. The legislature should include in its 16-year plan funding for Ferries' revised reservation program.	34. Concur
		35. The legislature should decrease funding for terminal security improvements at Ferries' revised level.	35. Concur
		36. The legislature should increase funding for terminal seismic improvements to provide a placeholder for additional improvements resulting from Ferries' ongoing seismic surveys.	36. Concur
		37. The legislature should not fund emergency generators at small terminals where minimal revenue is at risk during power outages, instead continuing to rely on vessel shore power during landside power outages.	37. Concur. It should be noted that on multi-destinational routes like the San Juan Islands, not supplying emergency generators to one island will impact all islands with delayed sailings.
		38. The legislature should not fund dwell time improvements until the impact of operational and pricing strategies on ridership is known.	38. Concur
		39. The legislature should not fund transit capital improvements at terminals until the impact of operational and pricing strategies on walk-on ridership is known and until the availability of transit service is assessed.	39. We agree that with limited funds, these projects are lower in priority than new vessels. However, encouraging walk-ons is a key operational strategy, and transit connections are an important factor in encouraging walk-ons. If the funding

	Area	Recommendation	WSDOT Ferries Division Response
16-Year Capital Plan			picture improves, we will recommend adding the transit enhancement projects back in to the capital budget.
		40. The legislature should provide funding for the relocation of the Mukilteo terminal without bow loading.	40. Concur
		41. The legislature should not fund non-essential terminal improvement projects at Anacortes and Lopez, and should move superfund site monitoring at Eagle Harbor to the operations budget.	41. No response
	Terminal Policy	42. The legislature should endorse the findings of the *Analysis of Joint Development Opportunities at Washington State Ferry Terminals: Final Report* and provide funding for WSDOT to pursue the identified development opportunities.	42. Concur
		43. The legislature and Ferries should consider third party management of major terminal projects, defined as those that exceed $50.0 million.	43. Concur
	Emergency Repair	44. The legislature should plan on emergency repair funding in the 2009-11 biennium that would equal the projected 2007-09 level for non-retired vessels and terminals, and adjust funding levels in anticipation of the retirement of the *Rhododendron* and the *Evergreen State* at the end of the 2009-11 biennium.	44. Do not concur. Concur with reducing emergency repair funding associated with the retirement of *M.V. Rhododendron*. Do not concur for *M.V. Evergreen State* – see comment regarding Recommendation #21.
	Administration and Indirect Costs	45. The legislature should adjust carry-forward amounts for one-time expenses in the administration and indirect support costs when developing its 16-year financial plan.	45. Concur
		46. The legislature should not fund specific terminal or vessel costs as part of administration and indirect costs, but rather accommodate those costs within terminal and vessel projects.	46. Concur
		47. The legislature should plan on capital administration costs of $96.4 million in developing its 16-year financial plan, a reduction of $3.3 million from Scenario A.	47. Concur

	Area	Recommendation	WSDOT Ferries Division Response
16-Year Capital Plan		48. The legislature should allocate project control section staff costs between vessel and terminal indirect costs when developing its 16-year financial plan.	48. Concur that vessels need additional budget and project control resources. We need to analyze how this can best be done. In the 09-11 budget, with two consultant positions converted to FTEs in vessel engineering for this purpose, we believe two additional positions are needed for vessels, not four.
		49. The legislature should not fund implementation of the WSDOT Project Management Reporting System in Ferries.	49. Concur for vessels, not terminals.
		50. The legislature should plan on terminal indirect costs of $55.7 million in developing its 16-year financial plan, a reduction of $30.7 million from Scenario A.	50. Do not concur.
		51. The legislature should plan on vessel indirect costs of $29.7 million over its 16-year financial plan, a reduction of $9.6 million from Scenario A.	51. Concur with many of the recommendations. However, there are some issues where continuing additional resources will be needed (e.g. LCCM asset inspection/documentation, noise consultant), plus there are a number of other adjustments which result in a net savings of $7.1 million instead of the $9.6 million identified by the consultant for the plan.
Operations 16-Year Plan	Vessel Operations	52. The legislature in developing its 16-year financial plan should assume fuel conservation savings from slowing vessels on average 0.5 knot in the summer and 0.75 knot the rest of the year.	52. Concur
		53. The legislature should endorse the concept of a fuel surcharge to stabilize Ferries' operations finances provided that Ferries provides the legislature with a plan for determining and applying the surcharge, and that Ferries reviews operational strategies to reduce fuel consumption before applying the surcharge.	53. Concur

	Area	Recommendation	WSDOT Ferries Division Response
Operations 16-Year Plan	Management & Support Costs	54. The legislature should adopt the policy proposed in the Governor's 2009-11 biennium budget of not charging the Puget Sound Ferry Operations Account for expenses incurred by WSDOT Executive Management (Program S) and Information Technology Services (Program C).	54. Concur
	Operations Policy	55. The legislature should consider the establishment of a vessel replacement fund that would set aside funds for the periodic replacement of vessels.	55. Concur
		56. The legislature should request a zero-based Ferries operations budget for the 2011-13 biennium.	56. Concur
		57. The legislature should establish its intent to have farebox recovery calculated on a consistent basis, including only costs charged to the Puget Sound Ferry Operations Account and including all such costs (i.e. Marine Employee Commission and OFM charges) unless specifically excluded by the legislature.	57. Concur

Summary of Alternatives

Area	Alternative
New Vessel Construction	Build three Island Home vessels instead of four and provide service on the Port Townsend-Keystone route with one vessel year-round.
	Build one fewer large vessel by: 1. Consolidating Sidney and San Juans routes and provide sailings to Sidney at less desirable hours; or 2. Purchasing a used foreign-flagged vessel to provide service to Sidney; or 3. Re-building a Super class ferry to extend its life beyond the anticipated retirement date.
Terminal Improvements	Preserve the Mukilteo terminal at its existing location instead of relocating.
	Preserve the existing Anacortes terminal building by re-roofing instead of constructing a new building.
Management and Support Costs	Self-insure property coverages that are currently purchased as part of the marine insurance program.
	Fund a marketing program, emphasizing off-peak ridership, to help Ferries attain the projected ridership and associated revenues.

SECTION I.
PURPOSE AND APPROACH

A. Purpose

The 2007 Legislature directed the Joint Transportation Committee (JTC) to make recommendations regarding the Washington State Department of Transportation (WSDOT) Ferries Division (Ferries) capital financing strategies for consideration in the 2009 legislative session. The study was required to include: (1) confirming Ferries' estimate of future capital requirements based on a long-range capital plan; and (2) WSDOT's development of a plan for co-development and public-private partnerships at terminals.

B. Ferries' Long-Range Plan

Ferries' *Revised Draft Long-Range Plan 2009-2030*, completed on January 31, 2009, is the basis for this report.

1. Legislative Direction on Ferries' Long-Range Plan

In the 2007 session, the legislature passed ESHB 2358 directing Ferries to adopt adaptive management practices in its operating and capital programs in order to keep costs as low as possible, maximize utilization of existing assets, and continuously improve the quality and timeliness of service. ESHB 2358 requires Ferries to base its capital plan on:

- A revised ridership forecast
- A revised vehicle level of service standard
- Operational strategies that ensure that existing assets are fully utilized
- Terminal design standards that choose the most efficient balance between capital and operating investments.

In the 2008 session, the legislature passed SSB 6932 directing Ferries to base its long-range vessel and terminal capital plan on its life-cycle cost models[13] and to include the following current plans:

- Vessel preservation plan
- Systemwide vessel rebuild and replacement plan
- Vessel deployment plan
- Terminal preservation plan.

SSB 6932 also directed Ferries to evaluate long-term operating costs related to fuel efficiency and staffing in planning for vessel acquisitions.

[13] The JTC Ferries Policy Work Group has reviewed modifications to the terminal life-cycle cost model. See *Joint Transportation Committee Policy Group Ferry System Review Phase II Status Report*, December 15, 2007, for further information on modifications to the terminal life-cycle cost model. The vessel life-cycle cost model is reviewed in *Vessel Preservation and Replacement Study*, January 2008, pp. 37-42.

2. JTC Participation in Ferries' Long-Range Plan

The Legislature directed the JTC to participate in as well as review Ferries' long-range capital plan (ESHB 2878 Section 205 (1)(a)(vi)). As part of its participation in Ferries' long-range capital plan, the JTC issued six reports as part of its Ferry Financing Study II.[14] Appendix I provides a summary of the Ferry Financing Study II recommendations and how they are reflected in Scenario A and/or this report's recommendations.

3. Capital Plan Revised Schedule

Ferries planned to release its Draft Long-Range Plan by the end of November 2008, with a final plan, following public review and comment, on January 7, 2009. The JTC anticipated finishing its review of the capital plan on January 29, 2009.

Ferries' schedule was modified to accommodate direction from the Governor to develop a fiscally constrained alternative plan. Ferries released its initial plan on December 26, 2008 and, following public comments, a *Revised Draft Long-Range Plan* on January 31, 2009.

The JTC's initial review of Ferries' capital plan and recommendations on long-term financing were presented to the House and Senate Transportation Committees on March 2, 2009. This draft report incorporates the March 2 presentation and subsequent analysis and recommendations.

C. WSDOT Joint Development Opportunities Report

WSDOT's Innovative Partnerships Program issued *Analysis of Joint Development Opportunities at Washington State Ferry Terminals Final Report* on January 12, 2009. The report's review of development opportunities at terminals identified seven terminals with development potential that are reviewed as part of this long-range finances report.[15]

D. Scope of Study

This study examines Ferries' expenditures. Ferries' long-term revenues are the subject of the Washington State Transportation Commission's *Ferry Funding Recommendations Final Report*, March 2009.

Ferries' *Revised Draft Long-Range Plan* covers the 22-year period from FY 2010 to FY 2031. The legislature adopts a capital and operating budget for one biennium supported by a 16-year financial plan. This report, which was prepared to assist the legislature with their review, focuses on the 16-year financial plan period from FY 2010 through FY 2025.

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[14] The JTC Ferries Financing studies are: (1) *Auto-Passenger Vessel Preservation and Replacement Final Report*, January 2008; (2) *Capital Program Staffing and Administration Cost Final Report*, April 2008; (3) *Systemwide Capital Projects Final Report*, May 2008; (4) *Management and Support Costs Final Report*, July 2008; (5) *Non-Labor, Non-Fuel Operating Cost Final Report*, July 2008; and (6) *Vessel Sizing and Timing Final Report*, April 2009.

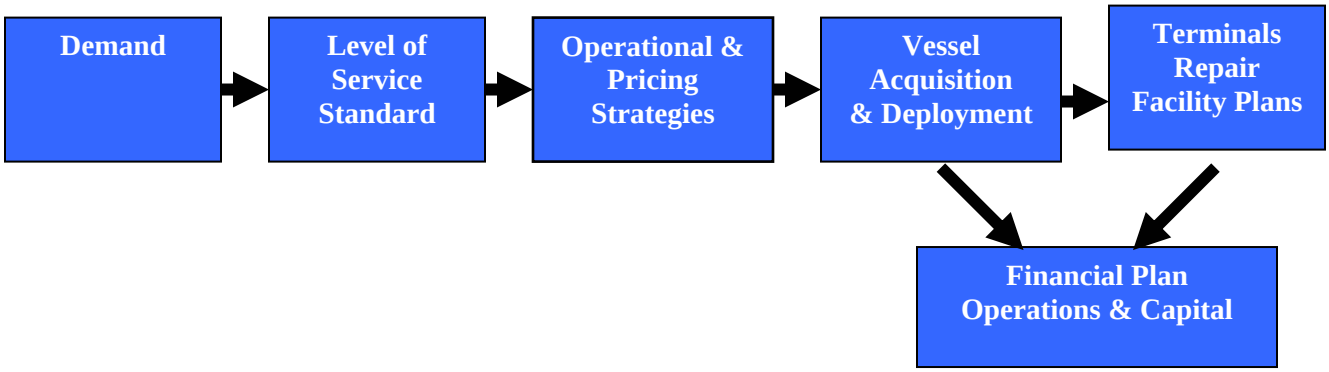
[15] The seven terminals with development potential are: Bainbridge, Edmonds, Seattle/Colman Dock, Anacortes, Friday Harbor, Mukilteo, and Orcas Island. See page 18 of the *Joint Development Opportunities at Washington State Ferry Terminals Final Report*.

E. Approach

1. Ferry Finance Model

The consultants used the ferry finance decision model recommended in the JTC's ferries finance studies as a basis for their review of Ferries' *Revised Draft Long-Range*. Under the model, ridership projections, level of service standards, and pricing and operational strategies are the basis for long-range vessel and terminal capital and operations financial decisions.

Figure 1.
Ferries Finance Decision Model



2. Ferries' Revised Draft Long-Range Plan Scenarios

Ferries' *Revised Draft Long-Range Plan* includes two scenarios. Scenario A assumes current levels of service with minor improvements and with the State continuing to be the primary funder of the ferry system. Scenario B recognizes that the State may not be able to meet the financial needs of the system, provides for reduced services, and anticipates local funding of passenger-only ferry service.[16]

This report focuses on Scenario A. Appendix II provides a summary of Scenario B.

3. Recommendations

This report includes recommendations for actions that the consultants believe the legislature should take. In light of the state's fiscal constraints, this report also includes alternatives. Alternatives are actions the legislature could take that would reduce costs while preserving service levels.

F. Sources and Methods

The consultants based this analysis on the capital and operating projections in Ferries' *Revised Draft Long-Range Plan*. Ferries has participated fully in the preparation of this report. They have provided the consultants with: (1) the financial model developed by Berk & Associates for Ferries' planning; (2) scoping documents for terminal projects; (3) accounting reports, including expenditures to date on capital and operating budgets for

[16] See page 2 of the *Revised Draft Long-Range Plan* for a general description of Scenarios A and B.

the 2007-09 biennium; (4) vessel fuel reports and projections; and (5) vessel and terminal life-cycle cost model capital plans.

The consultants also reviewed the Governor's proposed budget and capital plan. Staff of the House and Senate Transportation Committees assisted in the analysis of the 16-year financial plan.

SECTION II.
FERRIES' REVISED DRAFT LONG-RANGE PLAN

This section provides an overview of Ferries' *Revised Draft Long-Range Plan* ridership projections, proposed vehicle level of service standard, and proposed operating and pricing strategies, and discusses their implications for Ferries' long-term finances.

The consultants recommend that the legislature: (1) recognize the risks implicit in Ferries' ridership projection and require ongoing ridership reports as a basis for future decision-making; (2) endorse Ferries' proposed approach to vehicle level of service; and (3) endorse Ferries' proposed operational and pricing strategies, utilizing the pre-design process to review implementation of these strategies.

A. Ridership

1. Ridership Projection

ESHB 2358 required Ferries' capital plan to be based on a revised ridership forecast. The ridership was re-forecast with JTC participation and concurrence. The *Joint Transportation Committee Policy Group Ferry System Review Phase II Status Report*, December 15, 2008, which is attached as Appendix III, provides further information on the ridership forecast.

Ferries projects a 21 percent increase in system ridership in the 16-year plan period, assuming average fare increases of 2.5 percent per year. Ridership peaked in FY 2000 and has decreased by 12 percent between then and FY 2008. Only one fiscal year (2007) experienced any year-to-year growth during this nine-year period, and that growth was a modest 0.9 percent over FY 2006.

Ferries has assumed that ridership declined in response to sharp increases in fares starting in FY 2000 in response to the loss of motor vehicle excise tax (MVET) revenues. However, a general market survey by the Washington State Transportation Commission (WSTC) suggests that ridership changes are more related to changes in life style than to fare increases. (See *Status Report* in Appendix III for further detail.)

2. Implications for Ferries' Long-Term Finances

a. Ferries Needs to Plan for Modest Ridership Growth

Ferries' projected growth between its peak ridership in FY 2000 and FY 2025 is 9 percent. Population growth in the counties serviced by Ferries is anticipated to increase by approximately 35 percent during this same 25-year period.[17]

This means that Ferries does not need to plan for a large service expansion because projected ridership is not anticipated to grow in proportion to increases in population.

[17] *WSDOT Ferries Division Draft Long-Range Plan, Appendix D-Ridership Forecasting Technical Report*, December 31, 2008, p. 8.

b. Risk in Ridership Projection – Operations Revenue

Given the declining system ridership, which may be aggravated by the current economic condition, there is a risk that Ferries will not generate the ridership that is forecast. Ridership reductions beyond those forecast will affect Ferries' forecasted farebox revenue, which is projected to provide 80 percent of Ferries' operating revenue in Scenario A during the 16-year financial plan period. If for example, ridership were to stabilize at the FY 2007 level rather than grow 21 percent, it would result in a $142.8 million drop in projected revenues over the 16-year period.

3. Recommendations

Recommendation #1. The legislature should monitor Ferry ridership.

Ferries should provide reports to the legislature on ridership changes over time by route. This will assist the legislature as they make ongoing decisions on Ferries' operations and capital program.

WSDOT Ferries Division Response: Concur

Recommendation #2. The legislature should consider funding a marketing initiative.

At a projected 80 percent farebox recovery, Ferries is heavily dependent on ridership to support its operations expenses. A marketing initiative to encourage ridership, particularly during off-peak periods, could help to stabilize and even grow ridership.

WSDOT Ferries Division Response: Concur

Recommendation #3. The legislature should not plan on transfers from the operating budget to support the capital budget.

Ferries has previously planned to use operating income resulting from projected ridership increases to help pay for its capital program.[18] While not a part of Scenario A in Ferries' *Revised Draft Long-Range Plan*, transfers from operating to capital are contemplated in Scenario B. Given the risks inherent in the ridership projection and resulting revenue forecasts, the legislature should not plan for such transfers when developing the 16-year financial plan. This is consistent with ESHB 2358, which provides that if operating revenues are used to support capital, they must be specifically identified in fares.

WSDOT Ferries Division Response: Concur

B. Vehicle Level of Service Standard

1. Revised Vehicle Level of service Standard

The vehicle level of service standard is important because the capacity of the ferry system to carry vehicles is the primary constraint in the system. The 2007 legislature directed

[18] See *Washington State Ferries Draft Long-Range Strategic Plan 2006-2030*, July 2006, which projected a 68 percent increase in ridership. The *Revised Draft Long-Range Plan*, January 2009 projects a 36 percent increase in ridership by 2030.

Ferries to re-establish its vehicle level of service standard and evaluate if boat wait is the right measure.[19] ESHB 2358 requires Ferries to base its capital plan on the revised standard.

Ferries' revised vehicle level of service standard is proposed to be the percentage of sailings filled to capacity in the summer, spring and winter rather than a boat wait standard.

2. Implications for Ferries' Long-Term Finances

a. More Cost-Efficient Balance of Peak and Non-Peak Service

Under the boat wait vehicle level of service standard, Ferries focused service planning on the delivery of weekday peak period service (3PM to 7PM) when vehicles could not get on the first available ferry. Ferries' revised vehicle level of service standard, consistent with legislative direction to maximize utilization of existing assets, will provide for a more balanced delivery of peak and non-peak service.

b. More Cost-Efficient Capital and Operations Costs

A more balanced delivery of peak and non-peak service should result in more cost-efficient capital and operations costs. For example, decisions on vessel deployment for a particular route will be different when based on the percentage of annual sailings that are operating at capacity rather than based on boat waits during peak sailings.

3. Recommendations

Recommendation #4. The legislature should endorse Ferries' proposed percentage of sailings filled to capacity approach to vehicle level of service.

Ferries' proposed approach to vehicle level of service is consistent with legislative direction to maximize use of existing assets.

WSDOT Ferries Division Response: Concur

C. Operational and Pricing Strategies

1. Proposed Operational and Pricing Strategies

ESHB 2358 required Ferries to review a number of operational and pricing strategies. Ferries reviewed all of the operational and pricing strategies identified in ESHB 2358 plus others. (See Appendix III *Status Report* for further discussion.)

Ferries' *Revised Draft Long-Range Plan* proposes two types of strategies:

- *Strategies to increase walk-on use of ferries*
    - Transit enhancements
    - Fare incentives for foot-passengers

[19] Boat wait is the number of sailings a customer would miss due to capacity constraints before being able to board.

- *Strategies to level peak vehicle demand*
  - Vehicle reservations
  - No surcharge for vehicle reservations[20]

2. Implications for Ferries' Long-Term Finances

a. Encouraging Walk-on Use Will Help Maximize Utilization of Existing Vessel Capacity

The service constraint within the ferry system is the number of autos that can be accommodated. Throughout the system there has been, and is expected to be, capacity for additional walk-ons. Adopting strategies that will increase walk-on use will assist in maximizing use of existing vessel capacity.

b. On-Time Arrival of Vehicles Will Reduce Terminal Size

In previous planning efforts Ferries has proposed to build extensive holding facilities for autos that are waiting for sailings. With reservations, vehicles will arrive for the sailing 15 to 30 minutes before a reserved sailing. Ferries is not charging for reservations so that customers will not have an incentive to try to line up for spaces that are available. This means that there will be less space required to hold vehicles at or near the terminal and less on-street congestion.[21]

3. Recommendations

Recommendation #5. The legislature should endorse Ferries' proposed operational and pricing strategies, including transit enhancements and fare incentives to increase walk-on use of ferries and no-surcharge vehicle reservations to level peak vehicle demand.

Ferries' proposed operational and pricing strategies to encourage walk-on use of ferries and to level peak vehicle demand are consistent with legislative direction to maximize use of existing assets.

WSDOT Ferries Division Response: Concur

Recommendation #6. The legislature should use the pre-design process to more thoroughly review the implementation of Ferries' proposed transit enhancements and reservation strategies.

ESHB 2358 requires Ferries to provide the legislature with a pre-design report[22] for any terminal improvements. Transit enhancements and reservations are being implemented

[20] While there will not be a surcharge for reservations, it is anticipated that the reservation system will include a non-refundable pre-payment.

[21] Ferries' proposed auto-holding capacity in previous planning efforts was estimated to cost $300 million.

[22] The pre-design process is a decision-making tool for major capital budget expenditures. A pre-design study, which is required before the legislature appropriates design and construction funding, investigates alternatives and assesses which best solves a specific problem and at what cost. ESHB 2358 requires a pre-design process for all terminal improvement projects and for terminal preservation projects over $5.0 million.

through terminal improvement funding and will be subject to the pre-design process. Specific questions that should be addressed in Ferries' pre-design reports include:

- *Transit Enhancements*
    - Is transit service available from local transit providers?
    - How does the proposed transit improvement relate to the provision of transit service?
    - How will the proposed transit improvement encourage walk-on use of ferries?
    - Are there operational modifications that might achieve the same result as the proposed capital investment?
- *Vehicle Reservations*
    - What alternative implementation strategies have been assessed and what criteria were used to select the preferred system?
    - How will the reservation system respond to route differences?

WSDOT Ferries Division Response: Concur. We agree that a careful predesign study is critical to the success of the reservation system. We will work with OFM on an appropriate scope for pre-design.

SECTION III.
REVISED DRAFT LONG-RANGE PLAN SCENARIO A FINANCES OVERVIEW

This section reviews Ferries' *Revised Draft Long-Range Plan* Scenario A finances.

A. Scenario A Service Level

Scenario A is based on the ridership projections, vehicle level of service standard, and operational and pricing strategies discussed in Section II. This scenario maintains existing sailings on all routes.[23] There are modest vessel auto capacity increases on the Bremerton, Mukilteo, Interisland[24], and Pt. Defiance routes. The major service change is to break up the Fauntleroy-Southworth-Vashon Triangle route into three direct routes between Fauntleroy-Vashon, Fauntleroy-Southworth, and Vashon-Southworth.

B. Capital Finances

As shown in Table 1, Scenario A has total capital expenses over the 16-year financial plan period of $4,121.0 million with a funding shortfall of $2,188.8 million. Of the capital expenses, 57 percent is for vessels, 30 percent for terminals, 5 percent for administration and indirect costs, 5 percent for debt service, and 2 percent for emergency repairs.

The largest expense is for the construction of nine (9) new vessels at a total cost of $1,473.8 million.

C. Operations Finances

As shown in Table 1, Scenario A has total operations expenses over the 16-year period of $4,308.1 million with a funding shortfall of $261.0 million. Of the operations expenses, 68 percent is for vessel operating costs, 17 percent for terminal operations, and 15 percent for management and support costs.

[23] Scenario A service level includes restoration of full service to the Port Townsend route, which has been reduced to one boat service since the retirement of the Steel Electric class of vessels in late 2007.

[24] The Interisland route has historically been served by a Steel Electric vessel (59-auto). Since the retirement of the Steel Electric class vessels, it has been served by an Evergreen State class vessel (87-auto). Scenario A proposes a small vessel (64-auto) in the winter and a mid-size (87-auto) vessel the rest of the year.

Table 1.
Scenario A Financial Projection

($ millions)

Capital Program	09-11	11-13	13-15	15-17	17-19	19-21	21-23	23-25	16 Yrs.
Capital Revenue*	410.5	327.5	199.3	137.3	209.8	225.4	217.8	204.6	1,932.8
Expenses									
New Vessel Construction	165.0	186.5	164.5	165.9	176.4	189.4	204.5	221.6	1,473.8
Vessel Preservation	56.3	37.0	78.9	106.7	101.6	111.3	149.1	179.4	820.3
Vessel Improvements	15.4	4.8	5.6	6.1	6.5	7.0	7.5	8.0	60.9
Terminal Preservation	57.7	89.6	71.8	248.8	115.9	156.1	65.8	54.6	860.3
Terminal Improvements	52.2	34.9	56.9	102.7	135.2	9.0	0.0	0.0	390.9
Emergency Repairs	7.0	7.5	8.2	9.0	9.9	10.8	11.9	13.0	77.3
Admin, Support, & Indirect	26.8	25.5	26.2	27.2	28.3	29.3	30.5	31.6	225.4
Debt Service	33.8	31.8	31.8	31.5	31.1	27.8	19.0	5.2	212.1
Total Capital Expenses	414.2	417.6	443.9	697.9	604.9	540.7	488.3	513.4	4,121.0
Capital Surplus or Shortfall	(3.7)	(90.1)	(244.6)	(560.6)	(395.1)	(315.3)	(270.5)	(308.8)	(2,188.8)
Operating Program	009-11	11-13	13-15	15-17	17-19	19-21	21-23	23-25	16 YRS
Operating Revenue*	432.4	439.0	454.3	476.0	509.4	544.6	578.6	612.8	4,047.1
Expenses									
Fuel (Nov. 2008 forecast)	77.7	96.1	100.9	96.3	97.5	93.5	91.9	93.6	747.5
Non-Fuel Vessel Costs (labor, maintenance)	218.1	240.0	249.6	266.2	283.0	299.9	313.6	327.5	2,197.9
Terminal Costs	68.1	72.7	77.2	85.5	94.4	100.1	106.2	112.8	717.0
Management & Support Costs	69.5	72.4	75.4	78.2	81.3	84.6	88.0	91.4	640.8
OFM Charges for Labor Relations	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8
Marine Employee Commission	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	4.1
Total Operating Expenses	433.9	481.8	503.7	526.8	556.8	578.7	600.4	626.0	4,308.1
Operating Surplus or Shortfall	(1.5)	(42.8)	(49.4)	(50.8)	(47.4)	(34.1)	(21.8)	(13.2)	(261.0)
Farebox Recovery**	75%	74%	77%	78%	79%	81%	84%	86%	80%

*Revenue estimates revised by House and Senate Transportation Committee staff to reflect 2008 session 16-year financial plan, capital fund balance, and November farebox and ancillary revenue forecasts. Revenues include direct distribution of gas tax and licenses and permits; administrative transfers from the motor vehicle and multi-modal vehicle accounts; and, in the operations account, farebox, fuel surcharge, and miscellaneous revenues.

**Farebox recovery is the percentage of operations expenses that are covered by farebox, fuel surcharge, and other associated revenues.

SECTION IV.
CAPITAL PROGRAM

This section reviews the capital program proposed in Scenario A and makes cost reduction and policy recommendations. The consultants' cost reduction recommendations and alternatives are summarized in the table below.

Table 2.
Capital Program Summary
($ millions)

	Scenario A	Recommend	Change	Alternative (Cost Reductions)
Vessel Construction	1,473.8	514.0	-959.8	-313.0
Vessel Preservation	820.3	620.8	-199.5	-19.3
Vessel Improvement	60.9	53.7	-7.2	-1.0
Sub-total Vessels	*2,355.0*	*1,188.5*	*-1,166.5*	*-333.3*
Terminal Preservation	860.3	672.7	-187.6	-2.1
Terminal Improvement	390.9	165.0	-225.9	-55.7
Sub-total Terminals	*1,251.2*	*837.7*	*-413.5*	*-57.8*
Emergency Repairs	77.3	46.0	-31.3	
Administration & Indirect	225.4	181.9	-43.6	
Debt Service	212.1	212.1	0.0	
Total Expenditures	4,121.0	2,466.2	-1,654.8	-391.1
Capital Revenues	1,932.2	1,932.2		
Funding Gap	-2,188.8	-534.0	1,654.8	-142.9

The consultants' policy recommendations include recommendations for improved management of Ferries' vessel and terminal capital programs.

A. Vessel Capital Expenses

In Ferries' Scenario A 16-year capital program, the vessel capital costs are $2,355.0 million or 57 percent of all capital expenses.

1. Vessel Cost Inflation Assumptions

Nationally and regionally, vessel construction and repair costs are rising faster than general construction inflation.[25] Ferries' Scenario A uses the Bureau of Labor Statistics (BLS) Non-Military Shipbuilding Index to forecast inflation for the 16-year period rather than WSDOT's Construction Cost Index. The BLS Non-Military Shipbuilding Index shows a prior 10-year average annual cost increase of 4.65 percent, which Ferries rounded to 4.70 percent. The average annual cost increase in the WSDOT Construction

[25] See Congressional Budget Office, March 23, 2007, *Resource Implications of the Navy's Fiscal Year 2008 Shipbuilding Plan* and *Factors Influencing Navy Shipbuilding "Maintaining the 313 Plan"* by Allison Stiller, Deputy Assistant Secretary of the Navy for Ship Programs, for discussions of the factors affecting shipbuilding costs.

Cost Index is approximately 2 percent. There is also a Non-Military Ship Repair BLS index. This index shows that in the last 10 years, ship repair costs have increased an average of 3.75 percent per year.[26] This index is more applicable than the shipbuilding index to Ferries' vessel preservation, improvement, and emergency repair costs.

A significant portion of Ferries' vessel capital expenses are attributable to staff and consultant expenses. These costs are anticipated to continue to rise at the rates forecast in the WSDOT Construction Cost Index.

The table below shows the inflation assumptions used in Ferries' Scenario A and those recommended by the consultants.

Table 3.
Vessel Capital Program Inflation Rate Assumptions

		Application to Vessel Capital Program	
Cost Index	10-Yr Average Annual Increase	Scenario A	Recommended
BLS ship construction non-military	4.70%	All Vessel Capital Emergency Repair	Vessel construction (shipyard costs)
BLS ship repair non-military	3.75%		Vessel preservation (shipyard costs) Vessel improvement (shipyard costs) Emergency repairs (shipyard costs)
WSDOT Construction Cost Index (forecast approximate average)	2.00%		Staff & consultant percentage of vessel capital Construction - 7% Preservation - 20% Improvement - 20% Emergency repairs - 16%

The impact of the recommendations below is a reduction in the Scenario A capital program of $64.2 million over the 16-year plan period.

Recommendation #7. In developing a financial plan for Ferries, the legislature should recognize that shipyard costs are rising at a faster rate than the general rate of construction inflation reflected in the WSDOT Construction Cost Index.

WSDOT Ferries Division Response: Concur

Recommendation #8. The legislature should use the Bureau of Labor Statistics indexes for non-military ship construction and non-military ship repair for those portions of the vessel and emergency repair capital program that are for work done in commercial shipyards, and the WSDOT Construction Cost Index for staff and consultant costs.

WSDOT Ferries Division Response: Concur

[26] Ship repair costs have not risen as steeply as ship construction costs because a higher percentage of the cost of ship repair is labor rather than commodities such as steel and copper that have experienced higher annual cost increases.

2. New Vessel Construction

New vessel construction at a total capital cost of $1,473.8 million is the most significant cost in Ferries' Scenario A 16-year capital program. Other costs directly related to Ferries' proposed vessel construction program include: $117.9 million for preservation of new vessels, $6.4 million for new vessel improvements, and $12.4 million for an additional slip at the Southworth terminal to support the proposed break-up of triangle service on the Fauntleroy-Vashon-Southworth route. In total the new vessel construction program and associated vessel and terminal preservation and improvement account for 39 percent of all capital expenditures in the Scenario A 16-year capital program.

a. Fleet Size and Composition

The JTC's *Vessel Sizing and Timing Final Report,* April 2009, recommended that Ferries have a 22-vessel fleet to maintain existing service levels during the 16-year plan period.[27] Ferries' Scenario A has a 22-vessel fleet for existing service levels and adds one small vessel to add a fourth vessel to the Fauntleroy-Vashon-Southworth Triangle route. The consultants do not recommend adding a fourth vessel to the Fauntleroy-Vashon-Southworth Triangle route. Ferries could continue to provide the triangle service or, if more direct service is needed between Fauntleroy and Vashon and between Fauntleroy and Southworth, Ferries could do so in the three-vessel configuration by limiting service between Vashon and Southworth, the least used sub-route.

The *Vessel Sizing and Timing Final Report,* which analyzed key service indicators for each route, recommended a smaller, more fuel efficient fleet composition than proposed by Ferries in Scenario A. The *Vessel Sizing and Timing Final Report* recommended acquiring four (4) small vessels (64-auto Island Home class vessels) and one new large (144-auto) vessel during the 16-year plan period, for a total of five (5) new vessels. Under Scenario A Ferries would acquire three (3) new small vessels (64-auto Island Home class vessels) and six (6) new large (144-auto) vessels during the 16-year plan period, for a total of nine (9) new vessels.

The table below shows the difference in fleet size and acquisition between Ferries' Scenario A and the recommended plan.

Table 4.
Scenario A and Recommended Fleet Size & Composition

Vessel Size/Autos	Scenario A FY 25		Recommended FY 25		Difference	
	Fleet Size	# Built	Fleet Size	# Built	Fleet Size	# Built
Jumbo (188-202)	5		5			
Large (144)	8	6	4	1		-5
Medium (124)	5		5			
Mid-size (87-90)	1		3			
Small (34-64)	4	3 (64 auto)	5	4 (64 auto)		1
Total	23	9	22	5		-4

[27] The *Vessel Sizing and Timing Final Report* recommends a 21-vessel fleet for existing service by 2030 assuming reductions in planned out-of-service time.

Recommendation #9. Ferries' Scenario A plan for a 22-vessel fleet to provide current service levels should be endorsed by the legislature.

WSDOT Ferries Division Response: Concur. 22 vessel fleet is critical to support existing service levels.

Recommendation #10. The legislature should not approve the Scenario A plan to add an additional vessel to the fleet to provide a fourth vessel on the Fauntleroy-Vashon-Southworth route. Ferries should either continue the triangle service or provide more direct service with the three vessels assigned to the route.

WSDOT Ferries Division Response: Concur

Recommendation #11. The legislature should fund the acquisition of five (5) new vessels in the 16-year financial plan period: four (4) small (64-auto Island Home class vessels) and one (1) large (144 auto) vessel.

WSDOT Ferries Division Response: Do not concur. Agree with number of vessels, but not allocation of vessels. WSF preference is 3, 64-car ferries and 2, 144-car ferries.

b. Vessel Construction Timing and Vessel Retirements

The *Vessel Sizing and Timing Final Report* recommended that Ferries acquire four (4) new small vessels during the FY 2010 to FY 2013 time period and begin the acquisition of new large 144-auto vessels when the existing Super class large vessels (144-auto) and two Evergreen State class mid-size (87-auto) vessels are due for retirement. Acquiring four (4) small vessels by FY 2013 would allow the restoration of two-vessel service to the Port Townsend route, discontinuing the lease of the Pierce County *Steilacoom II*. These acquisitions would also provide for the retirement of the two vessels in Ferries' fleet that are in most urgent need of retirement, the small 48-auto *Rhododendron* and the mid-size 87-auto *Evergreen State.* The acquisition of new large vessels (144-auto) would begin in the 2023-25 biennium with the retirement of the Super class *Elwha* (144-auto).

Ferries' Scenario A anticipates acquiring nine (9) new vessels and retiring six (6) vessels from the fleet. As in the recommended fleet, Scenario A retires the *Rhododendron* from the Pt. Defiance route and replaces it with a new small (64-auto) vessel. The mid-size *Evergreen State* (87-auto) is retired and replaced with the first new large vessel (144-auto). The second new large vessel (144-auto) allows Ferries to put an existing large vessel into a reserve status for emergency relief. The next four large vessels allow for the early retirement of two (2) mid-size vessels (87-auto) and two (2) large (144-auto) vessels.

The table below shows the relationship between the proposed vessel construction program and the retirement of vessels under Scenario A and the recommended plan.

Table 5.
Vessel Timing and Retirement Scenario A and Recommended Fleet

Retires Early	Scenario A		Recommended		Retirement Range
Biennium	Build	Retire	Build	Retire	
09-11	2 - Small (64-auto)		2 - Small (64-auto)		
11-13	1 - Small (64-auto)	*Rhododendron*	2- Small (64-auto)	*Rhododendron*	2011
13-15	1 - Large (144-auto)	*Evergreen State*		*Evergreen State*	2010-15
15-17	1 - Large (144-auto)				
17-19	1 - Large (144-auto)	*Tillikum* (Mid-Size, 87-auto)			*Tillikum* - 2022-27
19-21	1 - Large (144-auto)	*Klahowya* (Mid-Size, 87-auto)			*Klahowya*- 2023-28
21-23	1 - Large (144-auto)	*Elwha* (Large, 144-auto)			*Elwha* - 2025-30
23-25	1 - Large (144-auto)	*Yakima* (Large, 144-auto)			*Yakima* - 2028-33
23-25			1 - Large (144-auto)	1 Large (144-auto)	*Elwha* - 2025-30

Recommendation #12. The legislature should provide funding to acquire four new small vessels (64-auto Island Home class) in the 2010-2013 biennia and funding to construct a new large (144-auto) vessel in the 2023-25 biennium.

WSDOT Ferries Division Response: Do not concur. Regarding timing of vessel procurement, WSF preference is for 5 new vessels to be acquired in the next six years or not later than 8 years.

c. Fleet Deployment

The *Vessel Sizing and Timing Final Report* included a recommended deployment plan, which differs from the deployment proposed in Ferries' Scenario A. The deployment plans are shown in the table below.

Table 6.
Scenario A and Recommended Fleet Deployment

Route	# vessels	Scenario A 2025 Fleet			Recommended 2025 Fleet		
		Winter	F, S	Summer	Winter	F, S	Summer
Bainbridge & Bremerton	4	2 Jumbo		3 Jumbo	2 Jumbo		
		2 Large		1 Large	1 Large		
					1 Medium		
Clinton	2	1 Medium		1 Large	2 Medium		
		1 Large					
Kingston	2	2 Jumbo			2 Jumbo		
Pt. Defiance	1	1 Small			1 Small		
Port Townsend	1-2	1 Small		2 sm. w/shoulder	1 Small		2 sm. w/shoulder
San Juans & Sidney	4-5	2 Large		3 Large	2 Large	1 Large 1 Med.	3 Large
		1 Medium			1 Mid-Size		1 Medium
		1 Small	1 Mid-Size		1 Small		
Vashon-Fauntleroy	2	2 Medium					

Route	# vessels	Scenario A 2025 Fleet			Recommended 2025 Fleet		
		Winter	F, S	Summer	Winter	F, S	Summer
Southworth-Fauntleroy	1	1 Medium					
Southworth-Vashon	1	1 Small					
Triangle	3				1 Medium		
					2 Mid-Size		
Total Assigned		18	19	20	17	18	19

The differences between the deployment plan in Scenario A and in the recommended fleet are:

- *Deferral of larger vessels:* The recommended fleet defers the addition of larger vessels on the Bremerton, Clinton, and Triangle routes until the replacement of two Evergreen State class vessels in the 2025-29 biennia, which is outside the 16-year plan period.
- *Triangle route three-vessel service:* The Triangle route remains with three (3) vessels rather than Ferries' proposed four (4) vessel service.
- *Smaller vessel on the San Juans Interisland route:* The recommended fleet deploys a small vessel on the Interisland route year-round. Scenario A deploys a small vessel on the Interisland route in the winter and a mid-size vessel the rest of the year.
- *Smaller vessel on Bainbridge late sailings:* The recommended fleet deploys a large or, in the summer a medium, vessel rather than a jumbo vessel on the late sailings on the Bainbridge route, utilizing a vessel operating 16 hours per day on the Bremerton route.

Recommendation #13. The legislature's 16-year financial plan should assume the following deployments by 2025: Bainbridge-Bremerton routes four (4) vessels, including two (2) jumbo, one (1) large and one (1) medium; Clinton two (2) medium vessels; Kingston two (2) jumbo vessels; Point Defiance one (1) small vessel; Port Townsend two (2) small vessels; San Juans and Sidney routes five (5) vessels, including three (3) large, one (1) medium, and one (1) small (summer); and the Fauntleroy-Southworth-Vashon Triangle route three (3) vessels, including one (1) medium and two (2) mid-size.

WSDOT Ferries Division Response: Do not concur. WSF's preferred 2025 vessel deployment differs in the following: For the Bainbridge-Bremerton route combination two (2) jumbo and two (2) large; Clinton one (1) large and one (1) medium; San Juans and Sidney four (4) large and one (1) mid-size (summer); and the Fauntleroy-Vashon-Southworth triangle route three (3) medium summer and two (2) medium and one (1) mid-size fall/winter/ spring.

d. Vessel Construction 16-Year Financial Plan

The recommended new vessel construction plan, with corresponding vessel and terminal preservation and improvement expenditures, reduces the capital plan in Scenario A by $996.2 million over the 16-year financial plan.

The table below shows the differences in the 16-year financial plan between Scenario A and the recommended vessel construction plan.

Table 7.
New Vessel Construction Recommended vs. Scenario A
($ millions)

PIN	PIN Name	09-11	11-13	13-15	15-17	17-19	19-21	21-23	23-25	16 YR
Vessel Construction Recommended										
944470A	Construct Island Home Vessel 1[28]	49.6								49.6
944470A	Construct Island Home Vessel 2	70.6								70.6
944470A	Construct Island Home Vessel 3		72.9							72.9
944470A	Construct Island Home Vessel 4		72.9							72.9
944478A	144-Auto Vessel Construction							8.0	240.1	248.1
Total Vessel Construction		120.2	145.7	0.0	0.0	0.0	0.0	8.0	240.1	514.0
Change from Vessel Construction Scenario A		*-44.8*	*-40.8*	*-164.5*	*-165.9*	*-176.4*	*-189.4*	*-196.5*	*18.5*	*-959.8*
Vessel Preservation Recommended										
944471A	Island Home # 1 Preservation				0.1	2.2	6.0	7.0	1.7	17.0
944477A	Island Home # 2 Preservation				0.1	2.2	6.0	7.0	1.7	17.0
944478B	Island Home # 3 Preservation					0.1	2.4	6.4	7.5	16.4
	Island Home # 4 Preservation					0.1	2.4	6.4	7.5	16.4
	2 mid-size preservation (4 added biennia)					3.6	3.8	4.4	5.4`	17.4
	3 large preservation (1 added biennium)								6.9	6.9
Total Vessel Preservation					0.2	8.4	20.6	31.1	30.6	91.0
Change from Vessel Preservation Scenario A					*-0.2*	*2.4*	*-4.7*	*-8.3*	*-16.2*	*-26.9*
Vessel Improvement Recommended										
944476B	Island Home # 1 Improvement			0.2	0.2	0.2	0.2	0.2	0.2	1.2
944477B	Island Home # 2 Improvement			0.2	0.2	0.2	0.2	0.2	0.2	1.2
944478C	Island Home # 3 Improvement				0.2	0.2	0.2	0.2	0.2	1.0
	Island Home #4 Improvement				0.2	0.2	0.2	0.2	0.2	1.0
	2 mid-size Improvement (added 4 biennia)					0.6	0.6	0.8	0.8	2.8
	3 large Improvement (2 added biennia)							0.8	1.2	2.0
Total Vessel Improvement				0.3	0.7	1.4	1.5	2.4	2.9	9.3
Change from Vessel Improvement Scenario A				*0.0*	*0.1*	*0.6*	*0.4*	*0.8*	*1.0*	*2.9*
Terminal Improv.- 4th Vessel on Triangle Route Rec.										
916008S	*Southworth Terminal Improvement*				*-2.0*	*-10.4*				*-12.4*
Total Capital Related to New Vessel Construction		120.2	145.7	0.3	1.0	9.8	22.1	41.5	273.6	614.3
Change from Scenario A		-44.8	-40.8	-164.5	-167.9	-183.8	-193.7	-204.0	3.3	-996.2

e. Vessel Construction Alternatives

Alternatives to the construction of one small (64-auto Island Home class) vessel and one large (144-auto) vessel are outlined below.

[28] The 2009-11 biennium partially funds the first new Island Home, which was started with funding in the 2007-09 biennium that is not included in this table.

i. Option To Build One Less Small Vessel

To build three rather than four small vessels, the legislature could consider having one-boat service on the Port Townsend route in the summer and shoulder seasons. Ferries' Scenario A and the recommended fleet both include two vessels on this route during the summer and shoulder seasons, one of which operates 16 hours a day and the other eight hours. This was the level of service provided prior to the retirement of the Steel Electric class vessels in November 2007. If one vessel were deployed on the route, it would operate a 24-hour-a-day schedule in the summer. This is the schedule used in summer 2008 when only one vessel operated on the route.

- ***Disadvantages:*** There would be fewer sailings on the Port Townsend route during the peak periods; and having only one vessel on the route would eliminate the potential for expanding service. The *Vessel Sizing and Timing Final Report* found that the Port Townsend route, with one vessel operating 16 hours per day and a second 8 hours a day, will have one of the highest summer percentages of auto capacity utilized and percentage of sailings sold out in the system at 2020 and 2030 projected ridership levels.
- ***Cost Savings:*** During the 16-year plan period, $93.2 million would be saved in vessel capital construction, preservation, and improvement funding from not building one small vessel. In addition, vessel operations costs would be reduced by $39.1 million over the 16 years and vessel insurance costs by $2.4 million.

ii. Options to Build One Less Large 144-Auto Vessel

There are three options to reduce the need to construct a large 144-auto vessel in the 2023-25 biennium. These are:

- ***Consolidate Sidney and San Juan Service:*** Ferries could consider providing the one round-trip sailing to Sidney in the fall and spring seasons and the two round-trip sailings in the summer by extending the hours of vessels otherwise assigned to the San Juan routes. The vessels assigned to the San Juan routes all currently operate 16 hours a day.
  - ***Disadvantage:*** Sidney sailings would be either very late or early. This option would also limit the potential for expanding service hours on the San Juan routes. The *Vessel Sizing and Timing Final Report* found that the San Juan routes from Anacortes to the Islands will have one of the highest summer percentages of auto capacity utilized and percentage of sailings sold out in the system at 2020 and 2030 projected ridership levels.

- ***Cost Savings:*** Building one less large vessel would save $240.1 million in capital costs in the 16-year financial plan.[29]

- ***Purchase a Foreign Flagged Vessel for the Sidney Route:*** The legislature could consider the procurement of a used vessel built outside the United States to operate on the Sidney route. Under United States law – the Jones Act – ships sailing between US ports must be United States flagged vessels. Ships that go between the United States and a foreign port can be foreign flagged vessels.
  - ***Disadvantage:*** The current Sidney vessel also supports some domestic San Juan Islands service, which would no longer be an option if a foreign flagged vessel were used. Under the Jones Act, a foreign flagged vessel could pick up people at multiple US ports, on the way to Sidney, as long as they all got off in Sidney and not in any of the US ports; and it could leave Sidney and let people off in multiple US ports, as long as no one got on in those interceding US ports. Today vessels sailing between Anacortes and Sidney let customers on and off at Friday Harbor.
  - ***Cost Savings:*** During the 16-year plan, having a used foreign flagged vessel would result in savings of $235.1 million, with the cost of a used foreign flagged vessel estimated at $5.0 million.
- ***Re-build a Super Class Ferry:*** The legislature could consider re-building a Super class ferry to extend its life beyond the anticipated retirement date. Ferries has extended the life of other vessel classes, such as the Evergreen State class, by investing in rebuilds relatively late in the life of the vessel.
  - ***Disadvantage:*** Extending the life of the Super class vessels would bring their retirement dates into the same time frame as the Jumbo Mark I vessels, compounding future vessel construction financing problems.
  - ***Cost Savings:*** During the 16-year plan, re-building a Super class vessel rather than constructing a new large vessel, would result in savings of $210.1 million. The estimated cost of rebuilding a Super class vessel is $30.0 million.

[29] The capital savings would occur in the 2023-25 biennium, which is the end of the 16-year plan period. Reductions in fixed vessel operations costs would occur starting in the 2025-27 biennium, which is beyond the 16-year plan period. Reductions in vessel preservation and improvement expenses would start in the 2029-31 biennium.

3. Vessel Preservation

Scenario A includes $820.3 million for vessel preservation, of which $702.4 million is for the preservation of existing vessels and $117.9 million is for the preservation of new vessels.

a. Vessel Preservation Program

As discussed in the JTC's *Auto-Passenger Vessel Preservation and Replacement Final Report*, January 2008, and *Vessel Sizing and Timing Final Report*, April 2009, vessel preservation is critical to the provision of stable ferry service. The JTC reports included recommendations to improve vessel preservation, which have been incorporated into Ferries *Revised Draft Long-Range Plan* and the Scenario A 16-year financial plan.

The improved preservation program elements include:

- An improved bilge and void preservation program
- Inspecting hull steel more frequently
- Moving hull steel to a category one priority in the life-cycle cost model (LCCM)[30]
- Developing an improved coating (painting) program to preserve steel and the structural integrity of the vessel.

b. Out-of-service time

The *Vessel Sizing and Timing Final Report* recommended that by 2030 Ferries reduce planned out-of-service time for each vessel to an average of six weeks from the existing seven weeks. This recommendation does not affect fleet deployment in the 16-year plan period, during which both the recommended and the Scenario A fleets have a reserve vessel.

Out-of-service time remains a critical issue. If Ferries is to achieve the goal of a one-week reduction in out-of-service time by 2030, the process must be in place during this 16-year plan period. Reducing out-of-service time will mean that Ferries ultimately will need fewer vessels to provide the anticipated service level and will have more reserve capacity from within its fleet of fully crewed and maintained vessels.[31]

Topside painting, which is a category 2 preservation item, is the preservation project with the longest planned out-of-service time, averaging 14 to 16 weeks. The LCCM has historically assumed that topside painting will occur every five years; in actuality it occurs every seven to 10 years.

Preservation of passenger, galley, and crew areas, also category 2 preservation items, also involves significant out-of-service time. These items are scheduled every 12 years, without regard to the route primarily served by the vessel. On some routes, such as Bremerton, the passenger cabins are heavily utilized. On others, such as Mukilteo, the

[30] There are two priority levels in the vessel LCCM. Priority one is for vital items that affect the structural integrity and safety of the vessel, and priority two for non-vital items. Formerly steel hull preservation was considered a priority two item.

[31] *Vessel Sizing and Timing Final Report*, pp. 41-46.

passenger cabins are less utilized because fewer passengers walk on the vessel and the crossing is short and riders who drive on tend to stay in their automobiles during the crossing. The LCCM assumes that passenger areas on vessels serving both routes would be restored on the same time cycle.

Ferries' Eagle Harbor Repair and Maintenance Facility is primarily devoted to vessel repair, with each vessel spending an average of two weeks per year at Eagle Harbor. The State Auditor recommended in a 2006 audit that Ferries consider double shifts at Eagle Harbor. In its response to the audit, Ferries looked at the staffing costs associated with a double shift, but did not consider the potential impact on reducing out-of-service time.[32]

c. Vessel Preservation Expenditures

In the 2005-07 biennium, Ferries expended 77 percent of the vessel preservation capital budget appropriated by the legislature in the 2005 session.[33] Through December 2008, which is 75 percent of the 2007-09 biennium, Ferries had expended 32 percent of its available vessel preservation capital budget. It is anticipated that Ferries will expend approximately 63 percent of its 2008 session adopted vessel preservation capital budget by the end of this biennium.

There are two reasons for this pattern of under-expenditure:

i. ***Emergencies:*** During the 2005-07 biennium Ferries' preservation program was affected by an extended emergency repair to the *Elwha*, a large Super class 144-auto vessel that was out of service for a year as the result of an engine fire. At the beginning of the 2007-09 biennium, in November 2008, Ferries retired four Steel Electric class vessels, and began emergency inspections and repair of other vessels. This has disrupted the vessel preservation program.

ii. ***LCCM Constructability and Project Delivery Review:*** Ferries' LCCM does not take into consideration out-of-service time and whether the vessel preservation program can be constructed and delivered as planned. As an example, the Scenario A preservation program has six topside painting projects in one biennium when only four per biennium are feasible given operational requirements. In addition, the LCCM does not balance the preservation program with planned out-of-service times for vessel improvement projects.

Recommendation #14. Vessel preservation planning should consider out-of-service time and incorporate a review of whether the program can be constructed and delivered as planned.

WSDOT Ferries Division Response: Concur.

Recommendation #15. The legislature should reduce the vessel preservation program by 15 percent in the 16-year plan, pending a constructability and delivery review.

[32] *Eagle Harbor Performance Audit Responses, November 2008, Analysis of Adding a Second Shift at Eagle Harbor*. WSDOT Ferries Division.
[33] *Auto-Passenger Vessel Preservation and Replacement Final Report*, pp. 54-56.

WSDOT Ferries Division Response: Do not concur. We agree that the vessel preservation program needs to be updated and reviewed for constructability. We do not concur with reducing the program unless this is warranted at the conclusion of the review. Some of the older vessels, particularly the Supers, are becoming more difficult to maintain, and we will need preservation funds to keep the fleet in service.

Recommendation #16. Ferries should aggressively pursue reducing out-of-service time, and the legislature should give priority to funding such reductions.

WSDOT Ferries Division Response: In general, WSF concurs that a focus should be placed on reducing out of service time in conducting preservation including revisiting the periodicity of topside painting and renovating passenger areas. However, it may not be practical to work double shifts at Eagle Harbor; not only from a cost perspective, but also from the perspective of impacting the neighborhood community with the noise and light associated with ship maintenance. Finally, out of service time is also affected by external influences such as regulatory mandates and unplanned vessel repairs.

Recommendation #17. Ferries should consider ways to reduce out-of-service time associated with Eagle Harbor Repair and Maintenance Facility vessel work, including the potential for double shifts.

WSDOT Ferries Division Response: WSF agrees that efforts should be made to reduce out of service time. WSF has been making efforts to use Eagle Harbor crews for maintenance activities during vessel preservation work periods in commercial yards. This has begun to reduce the amount of time vessels spend in Eagle Harbor. However, we believe the addition of a double shift or evening work at Eagle Harbor would be problematic and result in significant community impacts since the maintenance facility is located in a neighborhood setting.

Recommendation #18. In developing its 16-year financial plan, the legislature should assume that topside painting will occur every 10 years and request Ferries to review whether passenger space renovations are necessary every 12 years on all routes.

WSDOT Ferries Division Response: Concur

Recommendation #19. The legislature should increase funding for topside painting projects by 30 percent in order to permit funding of an accelerated painting schedule to reduce project out-of-service time

WSDOT Ferries Division Response: Concur. Accelerated painting schedules can be achieved subject to shipyard availability, the shipyard's subcontractors ability to double/triple shift, and time of year/weather conditions.

d. Vessel Preservation and Retirement Schedule

i. ***Hyak*** – The *Hyak* is a large Super class vessel that was not rebuilt at the same time as the other Super class ferries. As a consequence, Ferries planned to retire the *Hyak* in the 2010-15 time period. The *Auto-Passenger Vessel Preservation and Replacement Final Report* recommended that Ferries conduct a cost-benefit analysis of rebuilding the *Hyak* so that it could retire closer to its projected 60-year life. The *Revised Draft Long-Range Plan* recommends rebuilding the *Hyak* in the 2009-11 biennium, which is anticipated to extend the vessel's life until 2031. During the rebuild, Ferries will change the propulsion motor to allow the vessel to operate on two rather than four engines. The consultants concur that the *Hyak* should be rebuilt and recommend rebuilding its existing engine for use in another Super class vessel should an emergency need arise. This would reduce out-of-service time in the event of another motor problem, such as occurred with the *Elwha*.

ii. ***Rhododendron and Evergreen State*:** The *Rhododendron* and *Evergreen State* are the vessels in the most urgent need of retirement. The *Revised Draft Long-Range Plan* anticipates continued preservation of these vessels at their drydockings in the 2009-11 biennium so that the Certifications of Inspection from the United States Coast Guard, which is required for continued operation, can be maintained. The consultants recommend that these vessels be retired and not retained as standby vessels. The *Rhododendron* is the last single compartment vessel in Ferries' fleet and the *Evergreen State* has significant problems with its propulsion control system. Both are unsuitable for use as standby vessels.

e. Vessel Preservation Recommendations

Recommendation #20. The legislature should increase funding for the* Hyak *renovation to rebuild its motor for use in other Super class ferries if needed in order to reduce out-of-service time.

WSDOT Ferries Division Response: Concur

Recommendation #21. The legislature should not provide preservation funding for the* Evergreen State *or the* Rhododendron*, but rather allow the Certificates of Inspection for these vessels to lapse.

WSDOT Ferries Division Response: If the vessel procurement plan provides for 5 boats within eight years, we concur realizing the M.V. Evergreen State will need to remain in service until the first 144 is delivered and some minimal funding will be necessary to keep it fully operational. If not (such as the CRG recommendation for 4 64's in the near future and 144s later), do not concur. M.V. Hiyu is inadequate as a stand by vessel necessitating keeping Evergreen State fully maintained and preserved as a standby until the first 144 is delivered.

f. Vessel Preservation 16-Year Financial Plan

The recommended vessel preservation capital plan is reduced by $199.5 million over the 16-year period, of which $148.4 million is a reduction in preservation costs of existing vessels and $51.1 million is a reduction in preservation costs for new vessels. The decreases are the result of the vessel preservation recommendations, the recommended reduced inflation rate, and the recommended vessel construction plan.

The table below shows the difference between the recommended vessel preservation 16-year plan and Scenario A.

Table 8.
Vessel Preservation Recommended vs. Scenario A
($ millions)

PIN	PIN Name	09-11	11-13	13-15	15-17	17-19	19-21	21-23	23-25	16 YR
Jumbo Mark II Class										
944499C	Recommended MV Puyallup Preservation		5.4	2.0	8.0	15.9	1.3	2.1	7.7	42.5
	Scenario A		6.5	2.5	10.1	19.1	1.7	2.9	17.5	60.3
	Difference		*-1.1*	*-0.5*	*-2.1*	*-3.2*	*-0.4*	*-0.7*	*-9.7*	*-17.7*
944499D	Recommended MV Tacoma Preservation	3.8	1.7	8.5	4.7	12.8	2.2	4.1	10.5	48.3
	Scenario A	4.5	2.0	10.5	4.7	16.5	2.8	6.9	32.4	80.2
	Difference	*-0.7*	*-0.3*	*-1.9*	*0.0*	*-3.7*	*-0.7*	*-2.7*	*-21.9*	*-31.9*
944499E	Recommended MV Wenatchee Preservation	0.6	4.9	9.1	4.7	6.9	8.0	2.1	10.6	46.9
	Scenario A	0.7	5.9	11.2	4.6	8.9	10.5	2.8	12.9	57.6
	Difference	*-0.1*	*-1.0*	*-2.1*	*0.1*	*-2.0*	*-2.6*	*-0.7*	*-2.3*	*-10.7*
Sub-Total Recommended Jumbo Mark II Class Vessels		*4.5*	*12.0*	*19.7*	*17.4*	*35.5*	*11.4*	*8.3*	*28.8*	*137.7*
	Scenario A	*5.3*	*14.4*	*24.1*	*19.4*	*44.4*	*15.1*	*12.6*	*62.7*	*198.0*
	Difference	*-0.8*	*-2.4*	*-4.5*	*-2.0*	*-8.9*	*-3.7*	*-4.2*	*-33.9*	*-60.3*
Jumbo Mark I Class										
944442B	Recommended MV Spokane Preservation	4.3	0.8	0.9	5.7	6.1	1.5	7.9	7.5	34.7
	Scenario A	5.1	0.9	1.1	7.2	6.7	2.0	18.2	10.4	51.6
	Difference	*-0.8*	*-0.2*	*-0.2*	*-1.5*	*-0.6*	*-0.5*	*-10.4*	*-2.9*	*-16.9*
944441B	Recommended MV Walla Walla Preservation	0.4	3.4	5.0	3.8	9.2	5.2	1.9	10.2	39.0
	Scenario A	0.4	3.4	6.1	4.8	11.9	5.5	2.6	14.2	48.8
	Difference	*-0.1*	*0.0*	*-1.1*	*-1.0*	*-2.7*	*-0.3*	*-0.7*	*-4.0*	*-9.9*
Sub-Total Recommended Jumbo Mark I Class Vessels		*4.7*	*4.1*	*5.9*	*9.5*	*15.3*	*6.7*	*9.8*	*17.7*	*73.7*
	Scenario A	*5.5*	*4.3*	*7.2*	*12.0*	*18.6*	*7.5*	*20.8*	*24.5*	*100.5*
	Difference	*-0.8*	*-0.2*	*-1.3*	*-2.5*	*-3.2*	*-0.8*	*-11.1*	*-6.9*	*-26.8*
Super Class										
944432G	Recommended MV Elwha Preservation	4.2	0.3	5.7	6.1	4.4	0.8	2.3	0.0	23.9
	Scenario A	5.0	0.4	7.0	6.6	5.7	1.1	0.0	0.0	25.8
	Difference	*-0.7*	*-0.1*	*-1.3*	*-0.5*	*-1.3*	*-0.3*	*2.3*	*0.0*	*-1.9*
944431D	Recommended MV Hyak Preservation	17.6	0.1	6.2	6.8	0.2	6.1	2.3	0.1	39.3
	Scenario A	17.8	0.1	6.6	8.5	0.3	8.1	3.2	0.1	44.6
	Difference	*-0.2*	*0.0*	*-0.4*	*-1.7*	*-0.1*	*-2.0*	*-0.8*	*0.0*	*-5.3*
944433D	Recommended MV Kaleetan Preservation	1.3	3.0	2.5	11.9	2.8	3.9	0.6	2.6	28.5
	Scenario A	1.5	3.5	3.0	14.0	3.6	5.2	0.8	0.4	32.0
	Difference	*-0.2*	*-0.6*	*-0.6*	*-2.0*	*-0.8*	*-1.3*	*-0.2*	*2.2*	*-3.5*
944434D	Recommended MV Yakima Preservation	5.9	0.6	2.7	9.4	1.6	11.6	2.0	3.6	37.4
	Scenario A	6.2	0.7	3.3	11.8	2.1	14.1	2.7	1.8	42.7
	Difference	*-0.2*	*-0.1*	*-0.6*	*-2.4*	*-0.5*	*-2.5*	*-0.7*	*1.8*	*-5.3*
Sub-Total Recommended Super Class Vessels		*29.0*	*3.9*	*17.1*	*34.2*	*9.0*	*22.5*	*7.2*	*6.2*	*129.1*
	Scenario A	*30.4*	*4.7*	*20.0*	*40.9*	*11.6*	*28.5*	*6.7*	*2.3*	*145.1*
	Difference	*-1.4*	*-0.8*	*-2.9*	*-6.8*	*-2.6*	*-6.0*	*0.5*	*3.9*	*-16.1*
Issaquah Class										
944404D	Recommended MV Cathlamet Preservation	0.1	3.3	4.3	0.7	2.5	5.2	11.9	6.3	34.4
	Scenario A	0.1	4.0	4.5	0.9	3.2	6.9	15.0	8.8	43.3
	Difference	*0.0*	*-0.7*	*-0.2*	*-0.2*	*-0.7*	*-1.7*	*-3.1*	*-2.5*	*-8.9*
944405D	Recommended MV Chelan Preservation	1.2	0.6	2.3	3.3	3.4	4.3	11.0	3.1	29.3

PIN	PIN Name	09-11	11-13	13-15	15-17	17-19	19-21	21-23	23-25	16 YR
	Scenario A	1.3	0.8	2.8	4.2	4.3	5.7	15.0	4.2	38.3
	Difference	*-0.1*	*-0.1*	*-0.5*	*-0.9*	*-1.0*	*-1.4*	*-3.9*	*-1.2*	*-9.1*
944401D	Recommended MV Issaquah Preservation	3.0	2.3	1.5	5.1	0.6	4.7	6.0	3.9	27.1
	Scenario A	3.6	2.8	1.8	5.5	0.8	6.2	17.8	5.4	43.8
	Difference	*-0.5*	*-0.5*	*-0.3*	*-0.4*	*-0.2*	*-1.5*	*-11.8*	*-1.5*	*-16.8*
944403D	Recommended MV Kitsap Preservation	2.2	0.1	2.3	8.7	4.2	3.6	4.1	5.2	30.4
	Scenario A	2.4	0.1	2.8	10.9	4.5	4.7	5.6	7.2	38.3
	Difference	*-0.2*	*0.0*	*-0.5*	*-2.2*	*-0.3*	*-1.1*	*-1.5*	*-2.0*	*-7.9*
944402D	Recommended MV Kittitas Preservation	1.5	0.3	3.1	1.8	4.6	4.4	6.4	5.9	28.1
	Scenario A	1.6	0.4	3.8	2.3	5.0	5.9	8.7	8.2	35.8
	Difference	*-0.1*	*-0.1*	*-0.7*	*-0.5*	*-0.4*	*-1.4*	*-2.3*	*-2.3*	*-7.7*
944406D	Recommended MV Sealth Preservation	0.3	0.6	1.1	6.2	2.0	4.0	5.5	6.6	26.3
	Scenario A	0.3	0.7	1.3	7.0	2.6	5.3	7.5	9.2	34.0
	Difference	*0.0*	*-0.1*	*-0.2*	*-0.8*	*-0.6*	*-1.3*	*-2.0*	*-2.6*	*-7.6*
Sub-Total Recommended Issaquah Class Vessels		*8.3*	*7.4*	*14.5*	*25.8*	*17.3*	*26.2*	*45.0*	*31.0*	*175.5*
	Scenario A	*9.3*	*8.8*	*16.9*	*30.8*	*20.4*	*34.7*	*69.5*	*43.1*	*233.5*
	Difference	*-1.0*	*-1.4*	*-2.5*	*-5.0*	*-3.1*	*-8.4*	*-24.5*	*-12.1*	*-58.0*
Evergreen State Class Vessels										
944410F	MV Evergreen St Preservation									
	Scenario A	0.9	0.3							1.2
	Difference	*-0.9*	*-0.3*							*-1.2*
944412C	MV Klahowya Preservation	1.6	2.1	4.4	1.1	2.1	1.9	2.2	2.7	18.1
	Scenario A	1.9	2.5	4.7	1.3	0.3	0.0	0.0	0.0	10.8
	Difference	*-0.3*	*-0.4*	*-0.3*	*-0.3*	*1.8*	*1.9*	*2.2*	*2.7*	*7.4*
944413B	MV Tillikum Preservation	1.7	1.4	4.4	0.8	1.8	1.9	2.2	2.7	17.1
	Scenario A	2.0	1.7	4.6	1.1	0.0	0.0	0.0	0.0	9.4
	Difference	*-0.3*	*-0.3*	*-0.2*	*-0.2*	*1.8*	*1.9*	*2.2*	*2.7*	*7.6*
Sub-Total Recommended Evergreen State Class Vessels		*3.3*	*3.5*	*8.9*	*1.9*	*3.9*	*3.8*	*4.4*	*5.5*	*35.2*
	Scenario A	*4.8*	*4.5*	*9.4*	*2.4*	*0.3*	*0.0*	*0.0*	*0.0*	*21.4*
	Difference	*-1.5*	*-1.0*	*-0.5*	*-0.5*	*3.6*	*3.8*	*4.4*	*5.5*	*13.8*
Hiyu Class										
944451C	MV Hiyu Preservation	0.5	0.1	1.1	0.7	0.2	0.2	0.0		2.8
	Scenario A	0.6	0.2	1.2	0.9	0.2	0.2	0.1		3.3
	Difference	*-0.1*	*0.0*	*-0.1*	*-0.2*	*-0.1*	*-0.1*	*0.0*		*-0.5*
Rhododendron Class										
944452B	MV Rhododendron Preservation									
	Scenario A	0.4	0.1							0.5
	Difference	*-0.4*	*-0.1*							*-0.5*
Total Existing Vessel Preservation Recommended		50.3	31.1	67.0	89.5	81.3	70.8	74.7	89.2	553.9
	Scenario A	56.3	37.0	78.9	106.4	95.6	86.0	109.6	132.6	702.4
	Difference	-6.0	-5.9	-11.8	-16.9	-14.3	-15.2	-34.9	-43.4	-148.4
New Vessel Preservation Recommended		0.0	0.0	0.0	0.2	4.7	16.8	26.8	18.3	66.8
	Scenario A				0.4	6.0	25.3	39.4	46.8	117.9
	Difference	*0.0*	*0.0*	*0.0*	*-0.2*	*-1.3*	*-8.5*	*-12.6*	*-28.5*	*-51.1*
Total Vessel Preservation Recommended		50.3	31.1	67.0	89.8	86.0	87.6	101.5	107.5	620.8
	Scenario A	56.3	37.0	78.9	106.8	101.6	111.3	149.0	179.4	820.3
	Difference	-6.0	-5.9	-11.8	-17.0	-15.6	-23.7	-47.5	-71.9	-199.5

4. Vessel Improvement

Scenario A includes $60.9 million for vessel improvement during the 16-year plan period, of which $54.5 million is for improvement of existing vessels and $6.4 million is for improvement of new vessels.

a. Regulatory Reserve

Of the $54.5 million for the improvement of existing vessels, $49.2 million is a reserve for improvements that may be necessary to meet federal United States Coast Guard or Clean Air Act regulatory requirements. All of the $6.4 million for improvement of new vessels is for this reserve.

b. Fuel Efficiency Improvements

Scenario A includes two fuel efficiency improvement: $6.7 million for the installation of new propulsion motors in two Super class (144-auto) vessels and $2.2 million for the installation of waste heat recovery systems in the Issaquah class (124-auto) vessels.

- ***Super class vessels fuel efficiency improvements.*** Upgraded engines would be installed in two of the Super class vessels to enable the vessels to run on two engines instead of four. Each installation is anticipated to take the vessel out of service for eight (8) weeks. The anticipated payback period for the investment is 4.4 years assuming fuel costs of $2.26 per gallon. As noted above, this same improvement will be made on the *Hyak* during its rebuild.[34]
- ***Issaquah class vessels fuel efficiency improvements.*** Scenario A proposes to change the heating system on the Issaquah class vessels from diesel burning steam boilers to a system that utilizes waste heat from the propulsion engines to heat the vessel most of the time. The consultants note that waste heat recovery has not proven to be cost effective even on large ocean going ships that run 90 percent of the time at full power. The cost associated with the installation is more than the fuel saved. In addition, maintenance and repair of engines and related waste heat recovery equipment increases the total maintenance and repair costs for the vessel appreciably. The difficulties of making this an economic investment would be compounded because ferries, unlike ocean going vessels, run at full power a very small percentage of the time and heat would not be provided from waste heat during maneuvering or when the vessel is berthed for loading and unloading.

Recommendation #22. The legislature should fund the fuel efficiency improvement on one of the Super class ferries in addition to the re-build of the* Hyak *(which will include a new propulsion engine) to minimize out-of-service time and to determine whether the modification is cost-effective.

WSDOT Ferries Division Response: Concur.

[34] The fourth Super Class vessel, the *Elwha*, has a different propulsion control motor and would not receive the upgrade.

Recommendation #23. The legislature should not fund the fuel efficiency project proposed for the Issaquah class ferries because waste heat recovery has not proven to be a cost-effective fuel conservation investment.

WSDOT Ferries Division Response: Do not concur. Waste heat recovery is a viable fuel consumption reduction methodology with an estimated payback of 5 years in this case. Recommend a pilot project on one Issaquah class vessel to validate the concept.

c. Other Improvements

Scenario A includes $1.0 million for steering gear ventilation for the Jumbo Mark II (202-auto) and Jumbo Mark I (188-auto) class vessels. Ferries has not completed an analysis of the steering gear problem nor engineered a solution.

Recommendation #24. The legislature should appropriate $50,000 for an analysis of the steering gear ventilation requirements for the Jumbo Mark II and Jumbo Mark I vessels rather than the $1.0 million included in Scenario A in order to ensure legislative understanding of the costs and benefits associated with the proposed solution.

WSDOT Ferries Division Response: Concur.

d. Vessel Improvement 16-Year Financial Plan

The recommended vessel improvement capital plan is reduced by $7.2 million over the 16-year period, of which $5.2 million is a reduction in improvement costs of existing vessels and $1.9 million is a reduction in improvement costs for new vessels. The decreases are the result of the vessel improvement recommendations, the recommended reduced inflation rate, and the recommended vessel construction plan.

The table below shows the difference between the recommended vessel improvement 16-year plan and Scenario A.

Table 9.
Vessel Improvement Recommended vs. Scenario A
($ millions)

PIN	PIN Name	09-11	11-13	13-15	15-17	17-19	19-21	21-23	23-25	16 YR
Jumbo Mark II Class										
944499F	Recommended MV Puyallup Improvement	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.4	2.6
	Scenario A	0.5	0.3	0.3	0.3	0.4	0.4	0.4	0.5	3.0
	Difference	*-0.2*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.4*
944499G	Recommended MV Tacoma Improvement	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	2.6
	Scenario A	0.5	0.3	0.3	0.3	0.4	0.4	0.4	0.5	3.0
	Difference	*-0.2*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.4*
944499H	Recommended MV Wenatchee Improvement	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	2.6
	Scenario A	0.5	0.3	0.3	0.3	0.4	0.4	0.4	0.5	3.0
	Difference	*-0.2*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.4*
Sub-Total Recommended Jumbo Mark II Class Vessels		*1.0*	*0.8*	*0.8*	*0.9*	*1.0*	*1.0*	*1.1*	*1.2*	*7.8*
	Scenario A	*1.6*	*0.8*	*0.9*	*1.0*	*1.1*	*1.2*	*1.3*	*1.4*	*9.1*
	Difference	*-0.6*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.1*	*-0.2*	*-0.2*	*-1.3*
Jumbo Mark I Class										
944442B	Recommended MV Spokane Improvement	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	2.6
	Scenario A	0.5	0.3	0.3	0.3	0.4	0.4	0.4	0.5	3.0
	Difference	*-0.2*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.4*
944441B	Recommended MV Walla Walla Improvement	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	2.6
	Scenario A	0.5	0.3	0.3	0.3	0.4	0.4	0.4	0.5	3.0
	Difference	*-0.2*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.4*
Sub-Total Recommended Jumbo Mark I Class Vessels		*0.6*	*0.5*	*0.6*	*0.6*	*0.6*	*0.7*	*0.7*	*0.8*	*5.2*
	Scenario A	*1.0*	*0.5*	*0.6*	*0.6*	*0.7*	*0.8*	*0.8*	*0.9*	*6.1*
	Difference	*-0.4*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.1*	*-0.1*	*-0.9*
Super Class										
944432G	Recommended MV Elwha Improvement	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.0	2.1
	Scenario A	0.3	0.3	0.3	0.3	0.4	0.0	0.0	0.0	1.5
	Difference	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.3*	*0.4*	*0.0*	*0.6*
944431D	Recommended MV Hyak Improvement	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	2.5
	Scenario A	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	2.8
	Difference	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.2*
944433D	Recommended MV Kaleetan Improvement	3.9	0.3	0.3	0.3	0.3	0.3	0.4	0.4	6.1
	Scenario A	3.9	0.3	0.3	0.3	0.4	0.4	0.0	0.0	5.5
	Difference	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.4*	*0.4*	*0.7*
944434D	Recommended MV Yakima Improvement	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.0	2.2
	Scenario A	3.3	0.3	0.3	0.3	0.4	0.4	0.4	0.0	5.4
	Difference	*-3.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*0.0*	*-3.2*
Sub-Total Recommended Super Class Vessels		*4.7*	*1.1*	*1.1*	*1.2*	*1.3*	*1.4*	*1.5*	*0.8*	*13.0*
	Scenario A	*7.7*	*1.1*	*1.2*	*1.3*	*1.4*	*1.2*	*0.8*	*0.5*	*15.1*
	Difference	*-3.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*0.2*	*0.6*	*0.3*	*-2.1*
Issaquah Class										
944404D	Recommended MV Cathlamet Improvement	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	2.5
	Scenario A	0.8	0.3	0.3	0.3	0.4	0.4	0.4	0.5	3.3
	Difference	*-0.6*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.8*
944405D	Recommended MV Chelan Improvement	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	2.5

PIN	PIN Name	09-11	11-13	13-15	15-17	17-19	19-21	21-23	23-25	16 YR
	Scenario A	0.7	0.3	0.3	0.3	0.4	0.4	0.4	0.5	3.2
	Difference	*-0.4*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.7*
944401D	Recommended MV Issaquah Improvement	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	2.5
	Scenario A	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	2.8
	Difference	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.2*
944403D	Recommended MV Kitsap Improvement	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	2.5
	Scenario A	0.7	0.3	0.3	0.3	0.4	0.4	0.4	0.5	3.2
	Difference	*-0.4*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.6*
944402D	Recommended MV Kittitas Improvement	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	2.6
	Scenario A	0.7	0.3	0.3	0.3	0.4	0.4	0.4	0.5	3.2
	Difference	*-0.4*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.6*
944406D	Recommended MV Sealth Improvement	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	2.5
	Scenario A	0.7	0.3	0.3	0.3	0.4	0.4	0.4	0.5	3.2
	Difference	*-0.4*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.7*
Sub-Total Recommended Issaquah Class Vessels		*1.6*	*1.6*	*1.7*	*1.8*	*1.9*	*2.1*	*2.2*	*2.4*	*15.2*
	Scenario A	*3.7*	*1.6*	*1.8*	*1.9*	*2.1*	*2.3*	*2.5*	*2.8*	*18.8*
	Difference	*-2.2*	*0.0*	*-0.1*	*-0.1*	*-0.2*	*-0.3*	*-0.3*	*-0.4*	*-3.6*
Evergreen State Class Vessels										
944410F	MV Evergreen St Improvement									
	Scenario A									
	Difference									
944412C	MV Klahowya Improvement	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	2.5
	Scenario A	0.3	0.3	0.3	0.3	0.0	0.0	0.0	0.0	1.1
	Difference	*0.0*	*0.0*	*0.0*	*0.0*	*0.3*	*0.3*	*0.4*	*0.4*	*1.4*
944413B	MV Tillikum Improvement	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	2.6
	Scenario A	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.9
	Difference	*0.0*	*0.0*	*0.0*	*0.3*	*0.3*	*0.3*	*0.4*	*0.4*	*1.7*
Sub-Total Recommended Evergreen State Class Vessels		*0.6*	*0.5*	*0.6*	*0.6*	*0.6*	*0.7*	*0.7*	*0.8*	*5.1*
	Scenario A	*0.6*	*0.5*	*0.6*	*0.3*	*0.0*	*0.0*	*0.0*	*0.0*	*2.0*
	Difference	*0.0*	*0.0*	*0.0*	*0.3*	*0.6*	*0.7*	*0.7*	*0.8*	*3.1*
Hiyu Class										
944451C	MV Hiyu Improvement	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	2.6
	Scenario A	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	2.8
	Difference	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.2*
Rhododendron Class										
944452B	MV Rhododendron Improvement	0.3								0.3
	Scenario A	0.3								0.5
	Difference	*0.0*								*-0.2*
Total Existing Vessel Improvement Recommended		9.0	4.7	5.1	5.4	5.8	6.2	6.6	6.3	49.2
	Scenario A	15.2	4.8	5.3	5.5	5.6	5.8	5.9	6.0	54.5
	Difference	-6.1	-0.1	-0.2	-0.1	0.1	0.4	0.7	0.3	-5.2
New Vessel Improvement Recommended		0.0	0.0	0.3	0.7	0.8	0.8	0.9	0.9	4.5
	Scenario A			0.4	0.6	0.8	1.2	1.5	2.0	6.4
	Difference	*0.0*	*0.0*	*0.0*	*0.1*	*-0.1*	*-0.3*	*-0.6*	*-1.0*	*-1.9*
Total Vessel Improvement Recommended		9.0	4.7	5.4	6.1	6.6	7.0	7.5	7.2	53.7
	Scenario A	15.2	4.8	5.6	6.1	6.5	7.0	7.5	8.0	60.9
	Difference	-6.1	-0.1	-0.2	0.1	0.1	0.1	0.0	-0.7	-7.2

5. Vessel Policy Recommendations

a. Pre-Design Process

ESHB 2358 requires Ferries to submit a pre-design report to the legislature for all terminal improvement projects and for terminal preservation projects over $5.0 million. The consultants recommend that Ferries be required to submit a pre-design report for vessel construction and improvement projects and for vessel preservation projects over $5.0 million. The pre-design process would provide the legislature with an opportunity to review assumptions and cost estimates for new vessels, and the costs and benefits of vessel improvements and major preservation projects, before appropriating design and construction funds.

Recommendation #25. The legislature should require a pre-design report for vessel construction and improvement projects and for vessel preservation projects over $5.0 million.

WSDOT Ferries Division Response: Do not concur. Concur with the value of completing pre-design studies for construction, preservation, and improvement projects. However, the thresholds should be revised to: 1) All new construction; 2) $15.0 million for major renovations (preservation); and 3) Improvements $5 million for complete programs (not on vessel by vessel basis). For improvements mandated by regulatory agencies, only an appropriately scaled pre-design study should be necessary.

b. Out-of-Service Assessment

Reducing planned out-of-service time will help stabilize ferry service while reducing the number of vessels needed to provide a given level of service. As part of its pre-design report on new vessel construction, Ferries should provide a projection of out-of-service time, identify alternative designs that would reduce out-of-service time, and provide a life cycle cost analysis that considers out-of-service time. Examples of design decisions that have an effect on planned out-of-service time include furnishing materials, stainless steel vs. steel tanks, and aluminum superstructures.

Recommendation #26. The legislature should require as part of the pre-design process for new vessel construction a projection of out-of-service time and a life-cycle cost analysis of alternatives that would reduce planned out-of-service time. The life-cycle cost analysis should consider the impact on fleet size.

WSDOT Ferries Division Response: Concur

c. New Vessel Construction Design and Management

The *Capital Program Staffing and Administration Final Report*, April 2008, recommended that Ferries review its Vessel Engineering division to ensure core competency and a focus on vessel preservation. The corollary of this recommendation is that Ferries should not focus its staff on new vessel construction. Alternatives to be considered include:

- ***Existing designs.*** The Island Home vessel now under construction was adapted from a vessel designed for the Woods Hole, Martha's Vineyard and Nantucket Steamship Company. It has taken Ferries approximately 12 months to adapt the design, bid, and award a contract for this vessel. By contrast, Ferries has been working on the new 144-auto vessels for approximately 10 years. In addition to being faster and less expensive to design, an existing vessel also has the advantage of having real experience on which to project fuel and other operational characteristics.
- ***Third party vessel construction management.*** Third party management of vessel construction is a process by which an owner, such as the Ferry system, contracts with another entity to oversee the design and construction of new vessels.
- ***Improve use of design-build process.*** With or without use of third party construction management, Ferries should improve its use of the design-build process that has been authorized by the legislature. There are generally two ways to design and build vessels. One way is for the owner, such as Ferries, to prepare a concept design of what is desired and then contract with a naval architecture firm or a shipyard for the contract design upon which the construction bidding and price is based. A second way is for an owner, such as Ferries, with an inside design team to prepare all contract design, supportive engineering, specifications, contracts, model testing, engineering analysis of vibration, speed and power and give all materials to the shipyard upon which the yard will base the construction price. Ferries does neither of these. Ferries spends considerable time and money to produce an unusually detailed concept, but they do not have a contract design because they lack the internal capacity to do so. They then contract with a naval architect or shipyard to complete the design, which is now being done by Todd Shipyards for the 144-auto ferry. This dilutes responsibility for the design and makes it more expensive. For instance, although Ferries has developed and model tested the lines of the new 144-auto vessel that affect speed and the power required, they let the naval architect and shipyard modify the lines to make the vessel easier to build. There is no requirement to re-test the lines and no responsibility is placed upon the shipyard for performance because of the shipyard changes made. While Ferries has gone to great detail to specify certain items in the design, there is not the same degree of analysis as to the weight of the vessel and therefore no strict requirements on the shipyard to meet some weight target. (Weight targets are critical for fuel conservation.) Specifications give requirements for vibration and noise, but as the design prepared by Ferries has not really developed vibration and noise analysis, and anything the naval architect/shipyard does will be based upon what was submitted by Ferries, the naval architect/shipyard can always claim it was Ferries' data. The end result is that there is really no one responsible for the final design and any problems that may develop operationally.
- ***Link pre-design process to design-build.*** The pre-design process can be effectively integrated with the design-build process by having the pre-design report include the conceptual design that would form the basis for the initiation of a design-build process.

Recommendation #27. Ferries and the legislature should consider existing designs prior to launching new designs for vessels, consider third party management of new vessel design and construction, and ensure that the design-build process is integrated with the pre-design report process and used effectively to expedite vessel design and construction at minimum cost to the state.

WSDOT Ferries Division Response: Concur with considering existing designs before starting a new design for new ferries and ensuring the design build process is integrated with the pre-design report. Do not concur with recommendation to employ third party vessel construction management. Believe it adds costs while reducing the probability of delivering vessels that fully meet state requirements.

B. Terminal Capital Expenses

In Ferries Scenario A 16-year capital program, the terminal capital costs of $1,251.2 million are 30 percent of all capital expenses.

1. Terminal Preservation

Scenario A includes $860.3 million for terminal preservation in the 16-year plan.

a. Scoping and Cost Estimates

Ferries has, in conformance with legislative direction, updated its terminal life cycle cost model (LCCM). The update of the LCCM included a review of the standard life cycles of structures, condition updates of all inventory elements, and the deletion of items that do not have a standard service life. The financial result of the review was a $106.0 million reduction in needed terminal preservation projects over the 2007-23 16-year financial plan.

The LCCM is the basis for the development of project scopes and capital cost estimates for terminal preservation sub-projects identified by Work Order Identification Numbers (WINS). WINS are combined to form a total preservation project, which are identified by Project Identification Numbers (PINS). Ferries has recently initiated a revised scoping and cost estimating process for terminals that resulted in scoping level estimates for preservation WINS occurring within the first six years of the 16-year Scenario A plan.

The consultants reviewed scoping documents and capital cost estimates for 22 preservation WINS.

- ***Cost Estimating – Percentage Allowances***

  Ferries' estimates are intended to conform to WSDOT guidelines for percentage allowances (percentage of construction costs) for preliminary and construction engineering, contingencies, mobilization and other costs.[35] The consultants found:

[35] The consultants reviewed the following WSDOT cost estimating resources: *WSDOT Cost Estimating Guidelines for WSDOT Projects*, 2008; *Plans Preparation Manual*; *EBase User's Guide*; *WSDOT Unit Bid Analysis*, an online tool for determining historical costs on WSDOT projects; and *Bridge Design Manual (Chapter 12).*

- Ferries has, as a result of updating its LCCM, good system-wide unit cost data. The historical cost data are excellent.
- WSDOT has reasonable standards for percentage allowances for preliminary and construction engineering.
- WSDOT has a consistent methodology for cost estimating.
- Ferries does not consistently follow the WSDOT standards for preliminary and construction engineering, frequently applying percentages that are higher than the guidelines.
- Ferries applies preliminary engineering percentages to the entire construction cost, including construction engineering, contingency, sales tax, and operations support. Normal industry practice is to apply the preliminary engineering percentage to the construction cost only, excluding costs that are not direct construction costs.
- Mobilization cost percentage guidelines for WSDOT projects are between 7 and 10 percent. Ferries consistently uses 9 percent. The WSDOT mobilization cost estimate is based on highway and bridge work, which has a much heavier use of major equipment that must be moved to the site than does Ferries' work. It is not appropriate for Ferries to be using the higher end of the mobilization cost estimating range.
- WSDOT manuals allow a 30 to 50 percent design allowance at the scoping stage of a project. A more normal industry standard is 20 percent. The consultants believe that the three reasons given by Ferries for using these high design allowances are not justified:
  - *Geotechnical* – In most terminal situations Ferries is doing work in the same areas where they have done previous work. Ferries should be able to estimate the soils effects of their structures with a much higher degree of accuracy than for a typical WSDOT project.
  - *Environmental Issues* – These costs should be identified and carried as a separate allowance rather than being included as a general percentage in a design allowance.
  - *Tribal Mitigation* – Ferries has separate estimates for tribal mitigation, which should not then also be part of the design allowance.

- ***Unit Cost Estimates***
  - Ferries adds additional contingencies in their individual unit cost estimating, which are added before the contingency percentages are applied. In the WINS reviewed by the consultants, these additional contingencies or "adders" were as high as 15 percent on some items.
  - Ferries, in some instances, used different inventory quantities for their cost estimates than exist. For example, a cost estimate for the Fauntleroy terminal trestle included 51,000 square feet of trestle when there are only 41,000 square feet.

- Unit costs for some items are over-stated. For example, Ferries assumed $375.00 per square foot for the construction of 25,000 square feet of the terminal building in Seattle, when a very high end building cost should not exceed $250.00 per square foot. In addition, Ferries added a 10 percent contingency to the $375.00 per square foot unit cost estimate bringing it to $413.00 per square foot—before normal contingencies for preliminary engineering etc. were added..

- ***Project Budgets in Scenario A***
  - Project budgets were higher in Scenario A than Ferries projected in their scoping estimates, with the exception of the Southworth trestle, which was under-budgeted.[36]
  - In some instances, the Scenario A budget treated WINS as separate projects with separate mobilization and other costs, when the projects would be more cost effective if done together. For example, Scenario A assumed the Seattle terminal building would be replaced separately from the replacement of the trestle under the building with an added budget cost of $39.3 million. While possible, replacing the building separately from the trestle would, in Ferries' estimation, likely double or triple the complexity of the trestle work. The projects should be budgeted as though they will be done together since that is the logical way to construct the project.

- ***Revised Preservation WINS Budgets***

The total cost reduction, for the same scope of work, from the consultants' review of cost estimates for 22 preservation WINS is $140.0 million or 28 percent as shown in the table below. The revised cost includes correcting the budget for the Southworth trestle, and assumes that the Seattle terminal building and trestle are combined into one project. All revised cost estimates are included in Appendix IV.

Table 10.
Terminal Preservation Cost Estimating Review

($ millions)

		16 YR Capital Cost (Same Scope)			
WIN	Title	Scenario A	Recommended	Difference	%
Recommended Preservation Projects Reviewed					
M03352A	Anacortes Tie-Up Slip Preservation	13.2	9.0	-4.2	-32%
M03508A	Bremerton Slip 2 Wingwall Replacement	4.3	2.9	-1.4	-33%
M03912A	Fauntleroy Terminal Replacement	66.7	46.5	-20.2	-30%
M04012A	Friday Harbor Timber Trestle Replacement	15.0	11.0	-4.0	-27%
M04112A	Keystone Wingwall Preservation	4.8	2.7	-2.1	-44%
M04312A	Lopez Wingwall	9.0	7.0	-2.0	-22%
M04512A	Orcas Dolphin Preservation	1.4	1.2	-0.2	-12%
M04511A	Orcas Trestle Replacement	4.9	3.4	-1.5	-31%
M04611A	Point Defiance Terminal Preservation	5.8	4.1	-1.7	-29%
M04722A	Port Townsend Dolphin Preservation Slip 1	4.2	3.6	-0.6	-14%

[36] Ferries indicated that they did not know the source of the error in the Southworth trestle budget.

		16 YR Capital Cost (Same Scope)			
WIN	Title	Scenario A	Recommended	Difference	%
M04735A	Port Townsend Dolphin Preservation Slip 2	3.7	3.2	-0.5	-14%
M04731A	Port Townsend Slip 1 Preservation	11.8	8.7	-3.1	-26%
M04732A	Port Townsend Slip 2 Transfer Span Preservation	14.4	10.8	-3.6	-25%
M04839A	Seattle Slip 3 Transfer Span Preservation	13.9	11.0	-2.9	-21%
M04842A	Seattle Slip 2 Overhead Loading Preservation	2.9	2.2	-0.7	-25%
M04843A	Seattle Slip 3 Overhead Loading Preservation	28.6	21.4	-7.2	-25%
M04854A	Seattle Slip 2 Life Extension	5.0	3.6	-1.4	-28%
M04841A/M04846A	Seattle Terminal Building & Trestle	216.6	140.1	-76.5	-35%
M04904A	Shaw Dolphin Preservation	4.0	3.2	-0.8	-19%
M05003A	Southworth Trestle Preservation*	10.9	20.1	9.2	85%
M05104A	Tahlequah Trestle Replacement	8.5	5.4	-3.1	-36%
M05204A	Vashon Trestle Preservation	52.5	41.0	-11.5	-22%
Total Preservation Scope & Cost Estimates Reviewed		502.1	362.1	-140.0	-28%

* Project mistakenly under-budgeted in Scenario A.

- ***Performance Measure***

  One of WSDOT and Ferries' performance goals is to have 100 percent of projects within budget.[37] This goal may foster an environment in which projects are generously budgeted in order to avoid going over budget.

Recommendation #28. Ferries should revise its terminal cost estimating procedures to provide more consistent and tighter cost estimating, including an internal control to ensure that unit prices and the application of design and other allowances are reasonable.

WSDOT Ferries Division Response: Concur. Working on improvements.

Recommendation #29. Ferries should revise its budget development process to ensure that: terminal sub-projects are reviewed for constructability, with cost reductions for combining WINS into single construction projects incorporated in the capital 16-year plan; and that the capital budget reflects the scoping estimates.

WSDOT Ferries Division Response: Concur.

Recommendation #30. Ferries should revise its capital construction performance goals to encourage the development of reasonable project cost estimates.

WSDOT Ferries Division Response: Concur. The Asset Management Program will revise performance goals.

Recommendation #31. The legislature should approve project funding at a level consistent with the revised cost estimates for the 22 terminal preservation WINS reviewed by the consultants.

[37] *WSDOT Business Directions, 2009-15*. p. 34

WSDOT Ferries Division Response: No response.

b. Category 2 Terminal Preservation

The terminal LCCM divides assets into two categories:

- *Category 1:* Includes main and auxiliary slips and security items. These are considered the most essential items for preservation funding.
- *Category 2:* Includes tie-up slips and upland assets such as parking lots and terminal buildings.

Ferries' performance goal for Category 2 terminal preservation investments is a preservation needs percentage (PNP)[38] of 20 to 40 percent. At the end of the Scenario A 16-year plan, Ferries would have a Category 2 PNP of 6 percent, well above the performance goal, with three terminals meeting the Category 2 performance objective, one under, and 16 over the goal.[39]

To bring the Category 2 preservation program into closer alignment with the performance goal, the consultants reviewed:

- *Category 2 assets.* The consultants requested Ferries to review its planned expenditures for Category 2 assets and recommend reductions that would bring those expenditures closer to the performance goal. Ferries identified total reductions of $34.3 million over the 16-year plan including: Anacortes vendor storage and tie-up slip 2 ($3.1 million); Bainbridge emergency generator shelter ($0.3 million); Bremerton toll booths ($2.1 million); Eagle Harbor slips A, C, D, and F ($19.7 million); Fauntleroy traffic lanes ($0.1 million); Friday Harbor customs booth and uplands holding area ($1.1 million); Kingston tie-up slip 3, storage buildings, and covered vehicle parking ($1.4 million); Point Defiance storage buildings ($0.4 million); Seattle toll booths and canopy ($4.5 million); and Southworth toll booths ($1.6 million).
- *Uplands paving program.* Ferries is reviewing its uplands paving program for parking lots and access roads exploring the potential of asphalt overlays with intermediate chip seals as an alternative to full repaving. The consultants recommend reducing uplands paving costs by 50 percent in anticipation of the full review. This would reduce Category 2 preservation by $12.5 million over the 16-year plan.
- *Eagle Harbor passenger-only ferry (POF) vessel facilities.* Scenario A continues to preserve POF vessel facilities at the Eagle Harbor Repair & Maintenance Facility. It does not appear likely that King County, now operating the Vashon-Seattle POF service, will need the Eagle Harbor POF vessel facilities. The consultants recommend eliminating this funding, which will reduce Category 2 preservation by $1.5 million over the 16-year plan period.

[38] Preservation needs percentage is the percentage of systems that are not preserved within the projected replacement period.

[39] Ferries' response to consultant questions Feb. 7, 2009 modifying *WSF 10-20-08 Budget Request Document*, p. 7.

Recommendation #32. The legislature should reduce Category 2 terminal preservation funding in order to bring the 16-year plan closer to the performance goal for these assets, by reducing lower priority Category 2 investments, reducing the uplands paving program by 50 percent, and by not preserving the passenger-only vessel facilities at Eagle Harbor.

WSDOT Ferries Division Response: Concur.

c. Terminal Preservation 16-Year Financial Plan

The recommended terminal preservation plan is reduced by $187.6 million over the 16-year plan. The reduction is the result of the recommended cost estimating changes and the terminal preservation program recommendations.[40] The table below shows the difference between the recommended terminal preservation 16-year plan and Scenario A.

Table 11.
Terminal Preservation Recommended vs. Scenario A
($ millions)

PIN	PIN Name	09-11	11-13	13-15	15-17	17-19	19-21	21-23	23-25	16 YR
902020C	Recommended Anacortes Preservation	0.0	2.7	7.5	9.7	9.7	51.8	0.0	0.0	81.3
	Scenario A	0.0	4.5	10.8	10.5	9.7	51.8	2.8	0.3	90.4
	Difference	*0.0*	*-1.8*	*-3.3*	*-0.8*	*0.0*	*0.0*	*-2.8*	*-0.3*	*-9.0*
930513G	Recommended Bainbridge Preservation	0.0	0.2	7.5	0.0	0.1	3.2	4.2	12.4	27.6
	Scenario A	0.0	0.2	7.5	0.0	0.1	3.2	4.7	12.8	28.5
	Difference	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.5*	*-0.3*	*-0.9*
930410T	Recommended Bremerton Preservation	0.0	3.0	0.0	1.0	12.0	1.1	3.8	4.9	25.9
	Scenario A	0.0	4.5	0.0	1.0	14.2	1.1	4.6	4.9	30.2
	Difference	*0.0*	*-1.4*	*0.0*	*0.0*	*-2.1*	*0.0*	*-0.8*	*0.0*	*-4.4*
952516R	Recommended Clinton Preservation	0.0	0.0	0.2	0.0	0.1	0.2	2.5	1.3	4.3
	Scenario A	0.0	0.0	0.2	0.0	0.1	0.4	3.0	1.3	5.0
	Difference	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.2*	*-0.4*	*0.0*	*-0.6*
900040N	Recommended Eagle Harbor Preservation	19.2	0.0	0.3	14.4	0.0	5.6	0.0	0.0	39.5
	Scenario A	19.2	0.2	0.6	28.9	0.7	11.1	0.0	0.6	61.3
	Difference	*0.0*	*-0.2*	*-0.3*	*-14.4*	*-0.7*	*-5.6*	*0.0*	*-0.6*	*-21.8*
910413Q	Recommended Edmonds Preservation	1.6	0.6	0.2	0.4	0.5	0.0	0.0	0.0	3.2
	Scenario A	1.6	0.6	0.2	0.9	0.9	0.0	0.0	0.0	4.1
	Difference	*0.0*	*0.0*	*0.0*	*-0.4*	*-0.4*	*0.0*	*0.0*	*0.0*	*-0.9*
900005M	Recommended Fauntleroy Preservation				0.4	4.0	40.1	2.2	2.7	49.3
	Scenario A				0.5	6.0	57.4	3.1	2.7	69.6
	Difference	*0.0*	*0.0*	*0.0*	*-0.1*	*-2.0*	*-17.3*	*-0.9*	*0.0*	*-20.3*
900028U	Recommended Friday Harbor Preservation		1.8	3.0	11.0	0.0	0.0	1.9	2.3	19.9
	Scenario A	0.0	2.1	3.6	15.1	0.0	0.0	2.9	2.3	25.9
	Difference	*0.0*	*-0.3*	*-0.5*	*-4.1*	*0.0*	*0.0*	*-1.0*	*0.0*	*-6.0*
902017K	Recommended Keystone Preservation	2.7	0.0	4.0	2.8	3.7	0.2	1.0	0.0	14.4

[40] The recommended terminal preservation capital program also includes the deferral of one item (Kingston dolphin) that is not due for replacement until 2032 and the elimination of a double counting of a bridge seat at Fauntleroy for total corrections of $1.4 million.

PIN	PIN Name	09-11	11-13	13-15	15-17	17-19	19-21	21-23	23-25	16 YR
	Scenario A	4.8	0.0	4.0	2.8	3.7	0.4	2.0	0.0	17.7
	Difference	*-2.1*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.2*	*-1.0*	*0.0*	*-3.3*
910414P	Recommended Kingston Preservation	0.4	1.1	1.6	7.4	0.3	2.3	9.9	6.2	29.2
	Scenario A	0.4	1.6	1.8	7.4	0.9	2.6	10.2	6.7	31.5
	Difference	*0.0*	*-0.4*	*-0.2*	*0.0*	*-0.6*	*-0.3*	*-0.3*	*-0.5*	*-2.4*
900022I	Recommended Lopez Preservation	1.4	6.5	0.0	0.0	0.9	4.4	1.0	0.0	14.2
	Scenario A	1.9	8.0	0.0	0.0	0.9	4.4	2.1	0.0	17.2
	Difference	*-0.5*	*-1.5*	*0.0*	*0.0*	*0.0*	*0.0*	*-1.0*	*0.0*	*-3.0*
952515O	Recommended Mukilteo Preservation	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.9
	Scenario A	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.9
	Difference	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
900026P	Recommended Orcas Preservation	0.0	1.2	0.7	2.7	5.9	7.5	2.6	0.0	20.7
	Scenario A	0.0	1.4	1.1	3.8	5.9	7.5	4.3	0.0	24.1
	Difference	*0.0*	*-0.2*	*-0.3*	*-1.2*	*0.0*	*0.0*	*-1.7*	*0.0*	*-3.4*
900001G	Recommended Point Defiance Preservation	0.0	4.2	3.4	0.0	0.0	2.7	1.1	6.8	18.3
	Scenario A	0.0	4.5	4.9	0.0	0.0	2.7	1.3	7.2	20.6
	Difference	*0.0*	*-0.3*	*-1.4*	*0.0*	*0.0*	*0.0*	*-0.2*	*-0.4*	*-2.3*
900012K	Recommended Port Townsend Preservation	6.4	8.2	0.0	5.0	8.9	0.0	0.3	0.0	28.8
	Scenario A	7.3	8.7	0.0	6.3	11.9	0.0	0.6	0.0	34.7
	Difference	*-0.9*	*-0.5*	*0.0*	*-1.3*	*-2.9*	*0.0*	*-0.3*	*0.0*	*-5.9*
900010L	Recommended Seattle Preservation	4.9	37.7	8.8	93.2	31.9	0.0	6.0	5.7	188.1
	Scenario A	6.9	50.5	13.6	144.2	49.2	0.0	10.5	7.2	282.1
	Difference	*-2.0*	*-12.9*	*-4.8*	*-50.9*	*-17.3*	*0.0*	*-4.5*	*-1.5*	*-94.0*
900024F	Recommended Shaw Preservation	3.2	0.0	0.0	0.0	3.9	0.0	0.6	0.0	7.7
	Scenario A	4.0	0.0	0.0	0.0	3.9	0.0	0.7	0.0	8.6
	Difference	*-0.7*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.2*	*0.0*	*-0.9*
916008R	Recommended Southworth Preservation	0.0	0.0	0.6	5.8	13.7	0.8	0.2	0.0	21.2
	Scenario A	0.0	0.0	0.3	3.3	7.3	1.6	0.4	1.6	14.5
	Difference	*0.0*	*0.0*	*0.3*	*2.6*	*6.4*	*-0.8*	*-0.2*	*-1.6*	*6.6*
900002G	Recommended Tahlequah Preservation	0.0	0.0	0.0	0.5	0.5	4.5	0.6	6.8	12.9
	Scenario A	0.0	0.0	0.0	0.7	0.7	7.0	1.3	6.8	16.6
	Difference	*0.0*	*0.0*	*0.0*	*-0.3*	*-0.3*	*-2.5*	*-0.6*	*0.0*	*-3.7*
900006S	Recommended Vashon Preservation	2.0	2.2	18.0	18.9	0.0	4.8	11.3	0.0	57.2
	Scenario A	2.8	2.9	23.3	23.6	0.0	4.8	11.3	0.0	68.7
	Difference	*-0.8*	*-0.8*	*-5.3*	*-4.6*	*0.0*	*0.0*	*0.0*	*0.0*	*-11.5*
Total Terminal Preservation Recommended		50.7	69.3	55.9	173.2	95.9	129.2	49.3	49.2	672.7
	Scenario A	57.7	89.6	71.8	248.8	115.9	156.1	65.8	54.5	860.3
	Difference	-6.9	-20.3	-15.9	-75.7	-20.0	-26.9	-16.5	-5.3	-187.6

2. Terminal Improvements

Scenario A includes $390.9 million for terminal improvements in the 16-year plan. The terminal improvement program includes programmatic projects, dwell time improvements, transit improvements, and other terminal specific improvements.

The terminal improvement projects are changed substantially from those contemplated by Ferries in its *2006 Draft Strategic Plan* when Ferries planned relocations and/or major expansions of the Bainbridge, Edmonds, Keystone, Mukilteo, Port Townsend, and Seattle terminals. Of these projects, only the relocation of the Mukilteo terminal is included in

Scenario A. This change in the terminal improvement program reflects the revised ridership projection, the proposed vehicle level of service standard, and operational and pricing strategies.

All of the proposed terminal improvement funding in Scenario A occurs in the first 12 years of the 16-year plan, with no terminal improvement funding proposed for the 2021-25 biennia. The result is that major terminal improvement projects are proposed to occur before customer reaction to proposed operational and pricing strategies is known.

a. Programmatic Improvements

Scenario A includes $77.2 million for programmatic improvements, which are improvements that occur at a number of terminals. These projects have previously been budgeted as systemwide projects. In accordance with legislative direction, these projects are now budgeted as WINS or sub-projects within the appropriate terminal improvement projects.[41] Programmatic improvements include stormwater improvements ($34.1 million); reservations ($32.8 million); security improvements ($4.1 million); seismic improvements ($3.0 million); emergency generators ($1.2 million); smart card implementation ($1.2 million); phone improvements ($0.4 million); and Americans with Disabilities Act (ADA) improvements ($0.4 million).

- *Stormwater Improvements:* Scenario A includes $34.1 million as a placeholder for potential stormwater improvement projects in the 2015-21 biennia. Funding is provided for projects at all terminals. Specific stormwater improvements are included in terminal preservation and improvement projects as part of the terminal capital program.

Recommendation #33. The legislature should not fund the stormwater improvements program, but rather provide funding for stormwater projects as part of the funding of terminal preservation or improvement projects.

WSDOT Ferries Division Response: Do not concur. The completed "improvements" study would develop scoping level designs and estimates for implementation of stormwater best management practices (BMPs) at each terminal so that WSF can achieve compliance with the Federal Clean Water Act and State Water Quality Laws (RCS 90.48, WAC 173-201A, and WAC 173-270).

- *Reservations Improvements:* Scenario A proposes reservations as an operational strategy and includes $32.8 million in the terminal improvement program for implementation. After the *Revised Draft Long-Range Plan* was issued, Ferries reviewed its proposed reservation system and refined its cost estimate to $18.0 million, including: $10.2 million for transponder systems at six (6) terminals; $6.5 million for the central system and responder units at each terminal; web cameras at seven (7) terminals; and signage at all terminals except Anacortes.

[41] The *Systemwide Capital Projects Final Report*, May 2008, provides more information on the systemwide projects.

Table 12.
Recommended Reservations System Funding
($ millions)

Reservation System Component	16 YR	Terminals
Transponder System	10.2	Clinton, Edmonds, Fauntleroy, Kingston, Mukilteo, Southworth
Central System & Terminal Responder Units*	6.5	All
Web Cameras	1.1	Bainbridge, Clinton, Friday Harbor, Kingston, Lopez, Orcas, Seattle
Signage	0.2	All, except Anacortes
Total Reservations Cost	18.0	

* Central system costs are distributed to Clinton, Edmonds, Keystone, Kingston, Mukilteo, Port Townsend PINS.

Recommendation #34. The legislature should include in its 16-year plan funding for Ferries' revised reservation program.

WSDOT Ferries Division Response: Concur

- *Security Improvements:* Scenario A includes $4.1 million for security improvements at terminals in the 2009-11 biennium. The consultants reviewed the scoping documents for these projects, conducting the same review as for the terminal preservation projects. Ferries subsequently identified additional reductions, bringing the revised budget for security improvements to $2.4 million.

Recommendation #35. The legislature should decrease funding for terminal security improvements to Ferries' revised level.

WSDOT Ferries Division Response: Concur

- *Seismic Improvements:* Scenario A includes $3.0 million for seismic improvements at three (3) terminals in the 2009-11 biennium. Ferries is undertaking a seismic evaluation of all of its terminals, with the evaluations expected to be complete in the 2011-13 biennium. The consultants recommend adding $6.0 million as a placeholder for additional seismic improvements in the 2011-13 and 2013-15 biennia that may result from these inspections.

Recommendation #36. The legislature should increase funding for terminal seismic improvements to provide a placeholder for additional improvements resulting from Ferries' ongoing seismic surveys.

WSDOT Ferries Division Response: Concur.

- *Emergency Generators:* Scenario A includes $1.2 million to provide emergency generators at Port Townsend and Shaw in order to provide power for the electronic fare system during power outages.

Recommendation #37. The legislature should not fund emergency generators at small terminals where minimal revenue is at risk during power outages, instead continuing to rely on vessel shore power during landside power outages.

WSDOT Ferries Division Response: Concur. It should be noted that on multi-destinational routes like the San Juan Islands, not supplying emergency generators to one island will impact all islands with delayed sailings.

b. Dwell Time Improvements

Dwell time improvements are improvements intended to improve loading and unloading of vessels so that, as ridership grows, existing schedules can be maintained, particularly during peak periods. Dwell time improvements in Scenario A total $60.7 million over the 16-year plan. Projects include overhead loading at Clinton ($24.3 million) and Fauntleroy ($20.6 million); and tollbooth, holding, and exiting improvements at Port Townsend ($8.2 million), Tahlequah ($2.9 million), Point Defiance ($2.6 million), Keystone ($1.8 million), and Friday Harbor ($0.3 million).

The overhead loading projects assume increased walk-on ridership in response to operational and pricing strategies. The tollbooth, holding, and exiting improvements will assist with projected vehicular traffic.

Recommendation #38. The legislature should not fund dwell time improvements until the impact of operational and pricing strategies on ridership is known.

WSDOT Ferries Division Response: Concur.

c. Transit Improvements

Transit improvements in Scenario A total $58.1 million over the 16-year plan including improvements at Bainbridge ($45.1 million), Clinton ($11.5 million), and Kingston ($1.5 million). The consultants endorse the concept of enhancing transit service but do not recommend funding these projects until an assessment of the availability of local transit service opportunities can be done and the impact of operational and pricing strategies on walk-on ridership is known.

Recommendation #39. The legislature should not fund transit capital improvements at terminals until the impact of operational and pricing strategies on walk-on ridership is known and until the availability of transit service is assessed.

WSDOT Ferries Division Response: We agree that with limited funds, these projects are lower in priority than new vessels. However, encouraging walk-ons is a key operational strategy, and transit connections are an important factor in encouraging walk-ons. If the funding picture improves, we will recommend adding the transit enhancement projects back in to the capital budget.

d. Mukilteo Terminal Relocation

The relocation of the Mukilteo terminal is the largest terminal improvement project in Scenario A at $138.1 million. The advantages to relocating the terminal from its current location include: moving the terminal away from a very congested intersection that has impeded the loading and unloading of ferries and 1,500 feet closer to the Sounder stop; addition of a high-occupancy vehicle (HOV) entrance lane; and ease of adding overhead loading to the terminal at some time in the future.

As proposed in Scenario A, the Mukilteo terminal would include bow loading, which allows expedited loading and unloading but requires a larger terminal building. A January 2008 Ferries' analysis of alternatives for the Mukilteo terminal[42] notes that bow loading is a requirement for three (3) vessel service on the route. Two (2) vessel service is proposed for the Mukilteo route in Scenario A.

Ferries' estimate for relocating the terminal without bow loading was reviewed by the consultants, using the same approach as for the terminal preservation projects. The resulting estimate is a budget of $91.8 million over the 16-year plan.

Recommendation #40. The legislature should provide funding for the relocation of the Mukilteo terminal without bow loading.

WSDOT Ferries Division Response: Concur.

e. Other Terminal Improvements

Other terminal improvements included in Scenario A are: Anacortes terminal building replacement ($27.1 million), sign bridge to delineate lanes ($1.8 million), and concession storage building improvements ($0.3 million); the addition of a third slip at Southworth to support the addition of a fourth vessel on the Vashon-Fauntleroy-Southworth route ($12.4 million) and replacement of luminaries ($0.4 million); Seattle electrical upgrade ($7.6 million); Vashon dolphins ($5.4 million)[43] and funding for an agreement with King County to support passenger-only service ($0.3 million); Lopez exit walkway ($1.0 million); Keystone improved shore power and security ($0.4 million); and Eagle Harbor superfund site monitoring ($0.1 million).

The consultants recommend not funding the third slip at Southworth in conformance with the recommended vessel construction and deployment plan. The consultants' review found that the Anacortes sign bridge and concession storage building improvement and the Lopez exit walkway were not essential projects. The consultants recommend that, consistent with the definitions of capital in ESHB 2358, the Eagle Harbor superfund site monitoring be moved to the operations budget.

Recommendation #41. The legislature should not fund non-essential terminal improvement projects at Anacortes and Lopez, and should move superfund site monitoring at Eagle Harbor to the operations budget.

WSDOT Ferries Division Response: No response

f. Terminal Improvement 16-Year Financial Plan

The recommended terminal improvement plan is reduced by $225.9 million over the 16-year plan. The table below shows the difference between the recommended terminal preservation 16-year plan and Scenario A.

[42] *Mukilteo Multimodal Ferry Terminal Cost Reduction Alternative Option Development (Draft),* January 17, 2008.

[43] A pre-design report was submitted by Ferries to the legislature for the Vashon dolphins upgrade project. The proposed funding in Scenario A is consistent with the pre-design study.

Table 13.
Terminal Improvement Recommended vs. Scenario A

($ millions)

PIN	PIN Name	09-11	11-13	13-15	15-17	17-19	19-21	21-23	23-25	16 YR
902020D	Recommended Anacortes Improvement	28.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	28.7
	Scenario A	27.7	0.0	0.0	0.7	10.3	0.0	0.0	0.0	38.7
	Difference	*0.3*	*0.3*	*0.3*	*-0.7*	*-10.3*	*0.0*	*0.0*	*0.0*	*-10.0*
930513H	Recommended Bainbridge Improvement	0.5	0.2	0.2	0.1	0.1	0.0	0.0	0.0	1.1
	Scenario A	0.6	0.0	0.0	9.5	37.1	2.4	0.0	0.0	49.5
	Difference	*-0.1*	*0.2*	*0.2*	*-9.4*	*-37.0*	*-2.4*	*0.0*	*0.0*	*-48.5*
930410U	Recommended Bremerton Improvement	0.5	0.4	0.4	0.0	0.0	0.0	0.0	0.0	1.4
	Scenario A	0.6	0.0	0.0	0.7	3.3	1.4	0.0	0.0	5.9
	Difference	*-0.1*	*0.4*	*0.4*	*-0.6*	*-3.3*	*-1.4*	*0.0*	*0.0*	*-4.5*
952516S	Recommended Clinton Improvement	1.9	1.5	0.0	0.0	0.0	0.0	0.0	0.0	3.5
	Scenario A	0.2	5.7	29.6	0.9	2.1	2.7	0.0	0.0	41.2
	Difference	*1.7*	*-4.2*	*-29.6*	*-0.9*	*-2.1*	*-2.7*	*0.0*	*0.0*	*-37.7*
900040O	Recommended Eagle Harbor Improvement									
	Scenario A	0.0	0.0	0.0	0.0	3.8	0.0	0.0	0.0	3.8
	Difference	*0.0*	*0.0*	*0.0*	*0.0*	*-3.8*	*0.0*	*0.0*	*0.0*	*-3.8*
910413R	Recommended Edmonds Improvement	1.5	1.6	0.3	0.0	0.0	0.0	0.0	0.0	3.4
	Scenario A	0.5	2.5	1.6	0.0	1.0	0.0	0.0	0.0	5.6
	Difference	*1.0*	*-0.9*	*-1.3*	*0.0*	*-1.0*	*0.0*	*0.0*	*0.0*	*-2.2*
900005N	Recommended Fauntleroy Improvement	0.2	0.0	0.0	0.4	1.5	0.0	0.0	0.0	2.1
	Scenario A	0.2	0.0	0.0	4.1	19.5	0.0	0.0	0.0	23.8
	Difference	*0.0*	*0.0*	*0.0*	*-3.7*	*-18.0*	*0.0*	*0.0*	*0.0*	*-21.7*
900028V	Recommended Friday Harbor Improvement	0.5	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.7
	Scenario A	0.6	0.1	0.2	1.2	0.4	0.0	0.0	0.0	2.3
	Difference	*-0.1*	*-0.1*	*-0.2*	*-1.1*	*-0.2*	*0.0*	*0.0*	*0.0*	*-1.7*
902017M	Recommended Keystone Improvement	1.5	0.2	0.2	0.3	0.0	0.0	0.0	0.0	2.1
	Scenario A	2.3	1.7	0.0	0.9	0.0	0.0	0.0	0.0	4.9
	Difference	*-0.8*	*-1.6*	*0.2*	*-0.6*	*0.0*	*0.0*	*0.0*	*0.0*	*-2.8*
910414S	Recommended Kingston Improvement	1.2	1.5	0.0	0.0	0.0	0.0	0.0	0.0	2.7
	Scenario A	1.0	3.2	1.6	0.0	1.9	0.0	0.0	0.0	7.7
	Difference	*0.3*	*-1.7*	*-1.6*	*0.0*	*-1.9*	*0.0*	*0.0*	*0.0*	*-4.9*
900022J	Recommended Lopez Improvement	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.7
	Scenario A	0.2	0.0	0.0	0.9	0.5	0.5	0.0	0.0	2.2
	Difference	*0.0*	*0.2*	*0.2*	*-0.8*	*-0.4*	*-0.5*	*0.0*	*0.0*	*-1.4*
952515P	Recommended Mukilteo Improvement	4.3	7.4	17.2	48.7	18.4	0.0	0.0	0.0	95.9
	Scenario A	5.0	8.4	24.0	71.4	32.1	0.6	0.0	0.0	141.4
	Difference	*-0.8*	*-0.9*	*-6.8*	*-22.7*	*-13.7*	*-0.6*	*0.0*	*0.0*	*-45.5*
900026Q	Recommended Orcas Improvement	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.7
	Scenario A	0.2	0.0	0.0	1.0	0.4	0.0	0.0	0.0	1.6
	Difference	*0.0*	*0.2*	*0.2*	*-0.9*	*-0.2*	*0.0*	*0.0*	*0.0*	*-0.9*
900001H	Recommended Point Defiance Improvement	0.8	0.2	0.2	0.0	0.2	0.0	0.0	0.0	1.5
	Scenario A	0.9	0.0	0.0	3.0	0.5	0.0	0.0	0.0	4.4
	Difference	*-0.1*	*0.2*	*0.2*	*-3.0*	*-0.3*	*0.0*	*0.0*	*0.0*	*-2.9*
900012L	Recommended Port Townsend Improvement	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
	Scenario A	3.6	6.6	0.0	0.6	0.9	0.0	0.0	0.0	11.7
	Difference	*-2.7*	*-6.6*	*0.0*	*-0.5*	*-0.9*	*0.0*	*0.0*	*0.0*	*-10.7*
900010M	Recommended Seattle Improvement	1.7	7.0	0.3	0.2	0.1	0.0	0.0	0.0	9.2

PIN	PIN Name	09-11	11-13	13-15	15-17	17-19	19-21	21-23	23-25	16 YR
	Scenario A	1.8	6.7	0.0	1.9	6.6	0.0	0.0	0.0	17.0
	Difference	*-0.1*	*0.3*	*0.3*	*-1.7*	*-6.5*	*0.0*	*0.0*	*0.0*	*-7.8*
900024G	Recommended Shaw Improvement	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	Scenario A	0.1	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.9
	Difference	*0.0*	*0.0*	*0.0*	*-0.8*	*0.0*	*0.0*	*0.0*	*0.0*	*-0.8*
916008S	Recommended Southworth Improvement	0.1	0.0	0.0	0.8	1.5	0.0	0.0	0.0	2.4
	Scenario A	0.2	0.0	0.0	2.8	12.1	1.5	0.0	0.0	16.5
	Difference	*-0.1*	*0.0*	*0.0*	*-2.0*	*-10.6*	*-1.5*	*0.0*	*0.0*	*-14.1*
900002H	Recommended Tahlequah Improvement	0.4	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.9
	Scenario A	0.4	0.0	0.0	1.3	2.6	0.0	0.0	0.0	4.2
	Difference	*0.0*	*0.2*	*0.2*	*-1.2*	*-2.5*	*0.0*	*0.0*	*0.0*	*-3.3*
900006T	Recommended Vashon Improvement	6.2	0.4	0.4	0.0	0.0	0.0	0.0	0.0	7.1
	Scenario A	6.3	0.0	0.0	1.0	0.3	0.0	0.0	0.0	7.6
	Difference	*-0.1*	*0.4*	*0.4*	*-1.0*	*-0.3*	*0.0*	*0.0*	*0.0*	*-0.5*
Total Terminal Improvement Recommended		50.5	21.4	20.0	51.0	22.1	0.0	0.0	0.0	165.0
	Scenario A	52.2	34.9	56.9	102.7	135.2	9.0	0.0	0.0	390.8
	Difference	-1.7	-13.5	-37.0	-51.6	-113.1	-9.0	0.0	0.0	-225.9

g. Alternatives

Alternatives for the Anacortes terminal building replacement and the relocation of the Mukilteo terminal are outlined below.

i. Mukilteo Terminal Preservation Alternative

The legislature could preserve the Mukilteo terminal at its current location and maintain service on the route. The cost of preserving the terminal is $63.5 million, a reduction of $28.3 million from re-locating the terminal. This option would also reduce the terminal preservation budget by $2.6 million because it would include the mechanical and electrical upgrades already in the terminal preservation capital plan.

ii. Anacortes Terminal Preservation Alternative

The legislature could re-roof the existing Anacortes terminal building rather than replace it. The terminal is due for replacement but its life can be extended with a new roof estimated to cost $0.5 million. The net reduction in terminal improvement costs is $26.6 million.

3. Terminal Joint Development Opportunities

WSDOT's Innovative Partnerships Program commissioned Strategic Economics, Van Meter Williams Pollack, and KPFF to study the potential for joint development at ferry terminals. The *Analysis of Joint Development Opportunities at Washington State Ferry Terminals: Final Report*, January 12, 2009, examines the benefits of joint development, identifies terminals with potential for joint development, analyzes opportunities and challenges, and makes several policy-level recommendations.

a. Potential Benefits of Joint Development

Joint development is a real estate development project of publicly-owned land through multiple parties, such as a public-private partnership or collaboration with other public entities. The report identified the following main benefits to Ferries from development at

or near terminals: (1) the revenue from the development; (2) improvements to ferry facilities that a private developer would make as part of the project; (3) increased ferry ridership and farebox revenues through new residential or office development within walking distance of a ferry terminal; (4) leveraging the contribution of other public partners, such as local jurisdictions or transit agencies; and (5) local and regional benefits, such as reduced traffic congestion and improved quality of life.

b. Terminals with Potential for Joint Development

Joint development in connection with ferry terminals presents more challenges than does a typical transit-oriented development project. This is because ferry terminals are designed as an extension of the highway system, located where a state highway meets the water's edge, and are not usually themselves a destination.

The study included a comprehensive analysis of the development opportunities and constraints at Ferries' 19 terminals. The study concluded that seven terminals offer potential for development: Anacortes, Bainbridge, Edmonds, Friday Harbor, Mukilteo, Orcas Island, and Seattle/Colman Dock. Of these, three offer the best opportunities for joint development in the near term: Bainbridge, Edmonds, and Seattle/Colman Dock.

- ***Bainbridge Development Opportunities.*** The strongest development opportunity at the Bainbridge terminal appears to be a new hotel and restaurant on the Ferries-owned parking lot at the eastern edge of the terminal area. The study also evaluated incorporating a waterfront plaza, renovated terminal building and replacement parking. The study concluded that hotel development could be financially feasible for a developer and would provide a return for Ferries. The revenue could help to cover the costs of renovating the terminal and/or adding a significant amount of parking, or it could provide an ongoing revenue stream through a long-term ground lease. Ferries would need to provide a subsidy to the project if it included terminal renovation or other improvements, but the amount would be significantly less than for Ferries to provide the same improvements. A hotel project also would benefit Ferries by encouraging off-peak and walk-on ridership.
- ***Edmonds Development Opportunities.*** The study concluded that a mixed-use development on the Ferries/Skipper's site is likely to be financially feasible once the housing market stabilizes. Ferries could use the project revenue to improve operations or facilities at the terminal. Ferries could also use the revenue to leverage more significant infrastructure improvements, such as consolidated parking or improved multimodal connections.
- ***Seattle/Colman Dock Development Opportunities.*** The Seattle terminal's location in Seattle's central business district presents a strong market for private development and an important opportunity to expand walk-on ferry ridership. The City of Seattle is finalizing a waterfront plan and has expressed interest in working with Ferries to plan the future of Colman Dock. The study analyzed the potential for new mixed-use buildings (ground-floor retail and two to three floors of office space) along Alaskan Way and on the northern ferry trestle. A mixed use building along Alaskan Way could be developed without a physical impact on ferry operations and facilities. A mixed use building on the northern trestle would

need to be developed in conjunction with a new ferry terminal and more efficient holding area. The authors concluded that such developments are feasible and could generate some revenue for Ferries, but probably not enough to pay for all the needed improvements at Colman Dock. Ferries should wait until the schedule for the Viaduct is clear before evaluating the best timing for development at Colman Dock. In the meantime, there may be an opportunity to collaborate with the City of Seattle to approach planning and development of the waterfront near Colman Dock from a district perspective. This might be a way to leverage revenues from future development in the area to support such neighborhood amenities as a park or improved transit and pedestrian connections.

c. Joint Development Policy Recommendations

The study also made three general recommendations related to joint development. These were to: (1) establish system-wide joint development policies; (2) engage with local jurisdictions as they plan for the areas near ferry terminals, and look for opportunities to develop partnerships; and (3) dedicate a staff position to actively facilitate joint development at ferry terminals.

4. Terminal Policy Recommendations

a. Joint Development

The consultants support the findings and recommendations of the *Joint Development Opportunities* study. Potential revenue from joint development has not been included in Scenario A. The consultants concur that it is premature to anticipate funding from these potential developments.

Recommendation #42. The legislature should endorse the findings of* the Analysis of Joint Development Opportunities at Washington State Ferry Terminals: Final Report *and provide funding for WSDOT to pursue the identified development opportunities.

WSDOT Ferries Division Response: Concur.

b. Management of Major Terminal Projects

The *Capital Program Staffing and Administration Cost Final Report* noted: "The Ferries Long-Range Plan will include a projection of the size, scope, cost and sequencing of major new and improved terminals. This information should be used by Terminal Engineering to determine the staff needed for improvement projects. The consultants recommend that Terminal Engineering consider approaching these projects as an owner-developer, managing the work of outside design and construction firms. Staffing per project under this approach should be based on a percentage of project costs and should not exceed 3.5 percent of project costs (based on private sector experience). Design should be accomplished by outside firms. Construction inspection and testing should be conducted by outside experts, with an anticipated cost in the range of 0.5 percent to 1 percent of construction costs" (p. 27).

For major terminal projects, (i.e., those exceeding $50.0 million such as the preservation of the Seattle terminal and relocation of the Mukilteo terminal) using third party management could be particularly beneficial. Terminal Engineering has limited experience undertaking projects of this magnitude that might be better accomplished by entities with major project experience.

Recommendation #43. The legislature and Ferries should consider third party management of major terminal projects, defined as those that exceed $50.0 million.

WSDOT Ferries Division Response: Concur.

C. Emergency Repairs

In Ferries' Scenario A 16-year capital program, the emergency repair costs are $77.3 million.

Through December 2008, Ferries had expended $10.0 million in the 2007-09 biennium on emergency repairs, of which $6.3 million was on the Steel Electric class vessels now retired from the fleet. The projected emergency repair expense for vessels remaining in the fleet and for terminals through the end of the 2007-09 biennium is $6.3 million. Of this expenditure, $2.0 million is anticipated to be spent on the *Rhododendron* and the *Evergreen State.* Under Scenario A and the recommended fleet, these two vessels will retire from the fleet at the conclusion of the 2009-11 biennium, which should reduce emergency repair expenses.

Recommendation #44. The legislature should plan on emergency repair funding in the 2009-11 biennium that would equal the projected 2007-09 level for non-retired vessels and terminals, and adjust funding levels in anticipation of the retirement of the* Rhododendron *and the* Evergreen State *at the end of the 2009-11 biennium.

Table 14.
Emergency Repair Recommended vs. Scenario A
($ millions)

	09-11	11-13	13-15	15-17	17-19	19-21	21-23	23-25	16 YR
Recommended	6.3	4.6	4.9	5.2	5.6	6.0	6.4	6.9	46.0
Scenario A	7.0	7.5	8.2	9.0	9.9	10.8	11.9	13.0	77.3
Difference	*-0.7*	*-2.9*	*-3.3*	*-3.8*	*-4.3*	*-4.8*	*-5.4*	*-6.1*	*-31.3*

WSDOT Ferries Division Response: Do not concur. Concur with reducing emergency repair funding associated with the retirement of M.V. Rhododendron. Do not concur for M.V. Evergreen State – see comment regarding Recommendation #21.

D. Administration and Indirect Costs

In Ferries' Scenario A 16-year capital program, funding for administration and indirect costs is $225.4 million, of which $99.7 million is for central administration that supports

both vessels and terminals, $86.4 million is for terminal indirect costs, and $39.3 million is for vessel indirect costs.

In Scenario A, the central administration costs are 3 percent of total capital expenses (excluding debt service); terminal indirect costs are 7 percent of the terminal capital program costs; and vessel indirect costs are 2 percent of the vessel capital program costs.

ESHB 2358 required Ferries to allocate systemwide projects, which formerly included these administration and indirect costs, to terminal and vessel preservation and improvement projects. Ferries' cost allocation methodology for distribution of administration and indirect costs to projects was reviewed and endorsed in the JTC's *Systemwide Capital Projects Final Report,* May 2008.

1. Administrative and Indirect Cost Carry-Forward

Ferries' Scenario A developed detailed costs for administration and indirect support for the 2009-11 biennium. These costs were then carried forward and inflated over the next seven biennia to develop a 16-year plan with some adjustments for one time only costs. The consultants' review found additional 2009-11 biennium one time costs that should not have been carried forward to subsequent biennia.

Recommendation #45. The legislature should adjust carry-forward amounts for one-time expenses in the administration and indirect support costs when developing its 16-year financial plan.

WSDOT Ferries Division Response: Concur.

2. Terminal and Vessel Costs

All administration and indirect support costs should be for expenses that are not solely attributable to a specific terminal or vessel. In some cases, Ferries had included costs that should be terminal or vessel specific in administration and indirect costs. As an example, noise abatement on specific vessels was included in vessel indirect costs. The consultants recommend that these costs not be budgeted as part of administration and indirect costs.

Recommendation #46. The legislature should not fund specific terminal or vessel costs as part of administration and indirect costs, but rather accommodate those costs within terminal and vessel projects.

WSDOT Ferries Division Response: Concur.

3. Administration

Administration costs for legal, budget, human resources, accounting, planning, and communications total $99.7 million in the 16-year financial plan. The JTC's *Capital Program Staffing and Administration Cost Report,* April 2008, reviewed administration costs and made no recommendations for reductions, finding the costs to be reasonable.

Two costs in Scenario A, for a contract specialist ($1.2 million over the 16-year plan) and for communications consultants ($1.1 million over 16-year plan), should be budgeted in specific terminal or vessel projects. A grant funded position for a Security Manager is a one-time cost that should not have been carried forward into subsequent biennia.

Recommendation #47. The legislature should plan on capital administration costs of $96.4 million in developing its 16-year financial plan, a reduction of $3.3 million from Scenario A.

WSDOT Ferries Division Response: Concur.

4. Terminal Indirect Costs

Terminal indirect costs for project controls, technical support, planning and design standards, engineering studies, regulatory compliance, and administration and office support total $86.4 million in the 16-year financial plan, which is 7 percent of terminal capital costs. The JTC's *Capital Program Staffing and Administration Cost Report,* April 2008, reviewed terminal indirect costs and recommended cost reviews and reductions.

a. Project Controls

- ***Share with vessels:*** Terminals has a seven (7) staff project controls group that supports terminal project planning, budgeting and reporting. Vessels has no similar staff. The consultants recommend that the project controls group be shared with vessels.

Recommendation #48. The legislature should allocate project control section staff costs between vessel and terminal indirect costs when developing its 16-year financial plan.

WSDOT Ferries Division Response: Concur that vessels need additional budget and project control resources. We need to analyze how this can best be done. In the 09-11 budget, with two consultant positions converted to FTEs in vessel engineering for this purpose, we believe two additional positions are needed for vessels, not four.

- ***Project Management and Reporting System:*** The 2008 supplemental transportation budget (ESHB 2878, Section 309 (10)) required WSDOT to review the costs and benefits of continued use of the Primavera scheduling system in Ferries and to include that review with its 2009-11 budget submittal. Scenario A assumes continued use of the Primavera system and full implementation of WSDOT's Project Management and Reporting System (PMRS) at a cost of $7.2 million over the 16-year financial plan. The consultants recommend that the legislature fund continued licensing of a scheduling system for $0.5 million over the 16-year financial plan, but not fund implementation of PMRS. PMRS, which has been designed to support the highway divisions of WSDOT, is not suited to the small projects normally done by Ferries. WSDOT's rail division is not implementing PMRS, and the consultants recommend that Ferries be treated the same way.

Recommendation #49. The legislature should not fund implementation of the WSDOT Project Management Reporting System in Ferries.

WSDOT Ferries Division Response: Concur for vessels, not terminals.

- ***Impact on Financial Plan:*** The consultants identified savings of $18.6 million in the 16-year financial plan for terminal project controls resulting from the sharing of staff costs for terminal controls with Vessel Engineering, reduction of funding for PMRS, and reductions in consulting support.

b. Technical Support

The consultants identified savings of $0.4 million in the 16-year financial plan in terminal technical support from carry-forward adjustments for one-time equipment and basemapping expenses, not funding an inventory of terminal signs, and moving aerial photo expenses to projects. [44]

c. Planning and Design

The consultants identified savings of $5.8 million in the 16-year financial plan in planning and design from adjusting carry-forward expenditures for the one-time expense of developing engineering manuals.

d. Engineering Studies

The consultants identified savings of $1.4 million in the 16-year financial plan from adjusting the carry-forward expenditures for one-time expenses for seismic surveys and a stub pile replacement study. The consultants included an allowance of $0.2 million per biennium for terminal engineering studies.

e. Regulatory Compliance

The consultants identified savings of $0.3 million in the 16-year financial plan in regulatory compliance from adjusting mechanical and electrical consulting support for inspections to the actual expenditure projected for the 2007-09 biennium.

f. Office Support

The consultants identified savings of $4.3 million in office support in the 16-year financial plan by making adjustments for personal service contracts, staffing budgets, and reductions in capital outlay, goods and services, and travel.

Recommendation #50. The legislature should plan on terminal indirect costs of $55.7 million in developing its 16-year financial plan, a reduction of $30.7 million from Scenario A.

WSDOT Ferries Division Response: Do not concur.

[44] Aerial photos are taken to document changes to terminals at the conclusion of major projects.

5. Vessel Indirect Costs

Vessel indirect costs for life cycle cost model support, environmental studies, planning and design, technical support, noise control, and administration and office support total $39.3 million in the 16-year financial plan, which is 2 percent of vessel capital costs. The *Capital Program Staffing and Administration Cost Report*, April 2008, reviewed vessel indirect costs and recommending focusing greater management support on vessel preservation.

a. Project Controls

The consultants recommend adding $7.1 million over the 16-year plan to vessel indirect costs to allow vessels to share terminal's project controls staff. Vessels currently has no such staff and needs the support for scheduling and budgeting projects.

b. Vessel Life Cycle Cost Model (LCCM)

The consultants identified savings of $3.5 million over the 16-year plan from eliminating inspections and adjusting the carry-forward for a one-time consultant expense to review the LCCM. The consultants recommend that the inspections take place with other preservation projects or be accomplished by vessel engineering crews during the course of normal operations.

c. Vessel Environmental Studies

The consultants identified savings of $2.1 million over the 16-year plan from eliminating a duplicate request for a fuel savings and emissions coordinator; reducing funding for positive restraint system analysis and adjusting the carry-forward for this one time expense; and eliminating preliminary engineering for engine modifications required by the Clean Air Act. Positive restraint system analysis is being conducted to find a way to reduce engine use while a vessel is at berth. The analysis should be limited to operational or non-capital intensive alternatives. Modifications required for compliance with the Clean Air Act[45] will be supported by the engine manufacturers and in some cases the manufacturer will make the changes themselves.

d. Vessel Planning and Design

The consultants identified savings of $2.0 million over the 16-year plan. The consultants eliminated funding for DAPPER[46] models, an engineering manual update, analysis of skin fuel tank modifications[47], technical storage library funding, and by reducing autocad licenses. Additionally the consultants recommended transferring an allowance for stability analysis to the operations budget since it is in support of emergency response by the marine operations group.

[45] Compliance with new emission regulations in the Clean Air Act is required by 2014.

[46] Dapper is a software tool typically used in new vessel construction. Ferries has already accomplished dapper models for the Island Home and 144-auto ferry design projects.

[47] Skin fuel tank modifications would help prevent oil loss in the event of a grounding. However, modifications have not proven successful in other applications, are not required by the Coast Guard, and are not a good investment on older vessels. Both the 144-auto ferry and Island Home ferry designs have independent fuel tanks.

e. Vessel Noise Control Abatement

The consultants identified $2.6 million in savings over the 16-year plan. The savings were achieved by eliminating individual vessel improvement projects, which should be budgeted in the vessel improvement budget, and by adjusting the carry-forward for noise surveys to be completed at the end of the 2009-11 biennium.

f. Vessel Technical Support Activities

The consultants identified savings of $1.2 million over the 16-year plan. The consultants adjusted carry-forward expenses for a consultant to establish a revised bilge and void maintenance program; spread funding for radar laboratory equipment throughout the 16-year plan; eliminated a vessel sign study; and corrected the allowance for training. The consultants added funding of $0.2 million per biennium beginning in the 2011-13 biennium as an allowance for future vessel studies.

g. Vessel Design, Preservation, and New Construction Supervision and Office Support

The consultants identified savings of $5.4 million over the 16-year plan. The consultants recommend eliminating two on-site consultants and replacing them with budget staff, and removing a project engineer and inventory agent who are charging to projects from vessel indirect costs.

Recommendation #51. The legislature should plan on vessel indirect costs of $29.7 million over its 16-year financial plan, a reduction of $9.6 million from Scenario A.

WSDOT Ferries Division Response: Concur with many of the recommendations. However, there are some issues where continuing additional resources will be needed (e.g. LCCM asset inspection/documentation, noise consultant), plus there are a number of other adjustments which result in a net savings of $7.1 million instead of the $9.6 million identified by the consultant for the plan.

6. Administration and Indirect Cost 16-Year Financial Plan

The recommended administration and indirect cost capital plan is reduced by $43.6 million or 19 percent over the 16-year period. With the reductions in the recommended capital plan, administration grows to 5.6 percent of total capital costs and vessel indirect to 2.5 percent of vessel capital. Terminal indirect costs decline to 6.6 percent of terminal capital costs.

Table 15.
Administration and Indirect Capital Recommended vs. Scenario A
($ millions)

	09-11	11-13	13-15	15-17	17-19	19-21	21-23	23-25	16 YR	% of Capital
Recommended Administrative	10.6	10.9	11.3	11.8	12.2	12.7	13.2	13.7	96.4	5.6%
Scenario A	10.9	11.3	11.7	12.2	12.7	13.1	13.6	14.2	99.7	2.6%
Difference	*-0.3*	*-0.4*	*-0.4*	*-0.4*	*-0.5*	*-0.4*	*-0.4*	*-0.5*	*-3.3*	*3.1%*
Recommended Vessel Indirect	4.0	3.5	3.6	3.5	3.6	3.7	3.9	4.0	29.7	2.5%
Scenario A	4.7	4.4	4.6	4.7	4.9	5.1	5.3	5.5	39.3	1.7%
Difference	*-0.7*	*-0.9*	*-1.0*	*-1.2*	*-1.3*	*-1.4*	*-1.4*	*-1.5*	*-9.6*	*0.8%*
Recommended Terminal Indirect	8.2	6.3	6.2	6.5	6.7	7.0	7.3	7.5	55.7	6.6%
Scenario A	11.2	9.8	9.9	10.3	10.7	11.1	11.5	11.9	86.4	6.9%
Difference	*-3.0*	*-3.5*	*-3.7*	*-3.8*	*-4.0*	*-4.1*	*-4.2*	*-4.4*	*-30.7*	*-0.3%*
Recommended Total Admin & Indirect	22.8	20.7	21.1	21.8	22.5	23.4	24.4	25.2	181.9	
Scenario A	26.8	25.5	26.2	27.2	28.3	29.3	30.4	31.6	225.4	
Difference	-4.0	-4.8	-5.1	-5.4	-5.8	-5.9	-6.0	-6.4	-43.6	

SECTION V.
OPERATIONS

This section reviews the operations program proposed in Scenario A and makes cost reduction and policy recommendations. The consultants' cost reduction recommendations and alternatives are summarized in the table below.

Table 16.
Operations Program Summary
($ millions)

	Scenario A	Recommended	Change	Alternative (Cost Reductions)
Fuel (Nov. forecast)	747.5	720.9	-26.6	
Fixed Vessel Costs	1,072.7	1,034.6	-38.1	-39.1
Variable Vessel Costs	1,125.2	1,119.2	-6.0	
Sub-total Vessels	*2,945.4*	*2,874.7*	*-70.7*	*-39.1*
Terminal Costs	*717.0*	*717.0*	*0.0*	
Management & Support Costs	*640.8*	*556.7*	*-84.1*	*-80.8*
Office of Financial Management Charges	0.8	0.8	0.0	
Marine Employees Commission Charges	4.1	4.1	0.0	
Sub-Total Outside Agency Charges	*4.9*	*4.9*	*0.0*	
Total Expenditures	4,308.1	4,153.3	-154.8	-119.9
Operations Revenues	4,047.1	4,047.1		
Funding Gap	-261.0	-106.2	154.8	13.7

The consultants' policy recommendation is to endorse Ferries' proposed fuel surcharge provided that Ferries gives the legislature a plan on how the surcharge will be determined and applied, and considers operational changes to reduce fuel use before applying the surcharge.

A. Vessel Operations Expenses

In Ferries' Scenario A 16-year operations program, vessel operations expenses are $2,945.4 million or 68 percent of total operations expenses.

Vessel operations expenses include fuel, fixed costs - engine room staff and vessel repair and maintenance - and variable costs - deck labor and supplies. Fixed costs do not change with vessel deployment, while fuel and variable costs do.

The consultants used the financial model developed by Berk & Associates for Ferries' long-range planning in assessing operations costs to ensure compatible analysis.

1. Fuel Costs

Fuel costs are $747.5 million[48] in Ferries' Scenario A 16-year operations program.

a. Fleet Composition and Deployment

The recommended fleet composition and deployment discussed in Section IV has lower fuel costs because it includes smaller, more fuel efficient vessels and deploys smaller vessels on some routes. The result is a savings of $13.8 million over the 16-year plan.

b. Fuel Conservation

The *Vessel Sizing and Timing Final Report* recommended that Ferries slow vessels by 0.5 to 1.0 knot to reduce fuel consumption. Scenario A assumes an average 0.75 knot reduction in vessel speed all year except in the summer season. The consultants recommend that Ferries also slow vessels in the summer, focusing particularly on non-peak summer sailings. The consultants assumed that in the summer season vessels could be slowed an average of 0.5 knot which saves $12.8 million in the 16-year financial plan.

Recommendation #52. The legislature in developing its 16-year financial plan should assume fuel conservation savings from slowing vessels on average 0.5 knot in the summer and 0.75 knot the rest of the year.

WSDOT Ferries Division Response. Concur

c. Risk of Fuel Costs

Ferries' financial stability has been impacted by volatility in fuel prices. The *Revised Draft Long Range Plan* proposes a fuel surcharge to deal with this volatility. As proposed, the fuel surcharge would be in effect when fuel prices rise or lower beyond a pre-determined base fuel price. "Under this program, a customer's total fare would be subject to automatic increases in periods of rapid fuel price escalation… The surcharge would be reduced when fuel prices fell" (p. 74). Surcharge revenue of $42.8 million is included in Scenario A during the 2009-11 to 2017-19 biennia, representing 2.3 percent of the five biennia fare revenue.

The consultants recommend that the legislature endorse the concept of a fuel surcharge. Ferries should provide the legislature with a plan describing how the fuel surcharge would be determined and applied. Ferries should also review potential operational strategies to reduce fuel consumption before automatically implementing an increase in fares. For example, it may be possible to further slow vessels during periods of high fuel prices so that the full impact of increased fuel prices are not passed on to Ferries' customers.

Recommendation #53. The legislature should endorse the concept of a fuel surcharge to stabilize Ferries' operations finances provided that Ferries provides the legislature with a plan for determining and applying the surcharge, and that Ferries reviews operational strategies to reduce fuel consumption before applying the surcharge.

[48] Fuel costs are based on the November 2008 fuel price forecast from the Washington State Transportation Revenue Forecast Council.

WSDOT Ferries Division Response: Concur

2. Variable Vessel Costs

Variable vessel costs of $1,125.2 million are included in the Scenario A 16-year financial plan. These costs, for deck labor and deck supplies, change with deployment. The recommended fleet composition and deployment results in a reduction in vessel variable costs of $6.0 million over the 16-year financial plan as a result of deploying smaller vessels that have smaller deck crews.

3. Fixed Vessel Costs

Fixed vessels costs of $1,072.7 million are included in the Scenario A 16-year financial plan.

a. Fleet composition and deployment

Fixed vessel operations costs, for engine room crews and vessel repair and maintenance, do not change with deployment. The recommended fleet composition results in a reduction in vessel fixed costs of $38.1 million over the 16-year plan as a result of deploying smaller vessels that have smaller engine room crews and less maintenance and repair expense.

b. Alternative

The alternative discussed in Section IV of not acquiring one small vessel (Island Home) would reduce fixed vessel costs by $39.1 million over the 16-year plan.

4. Vessel Operations 16-Year Plan

The recommended vessel operations cost is reduced by $70.7 million over the 16-year plan. Cost reductions are the result of the fleet composition and deployment recommendations and slowing vessels in the summer.

Table 17.
Fuel Operations Costs Recommended vs. Scenario A
($ millions)

	09-11	11-13	13-15	15-17	17-19	19-21	21-23	23-25	16 YR
Recommended Fuel (Nov. 08 forecast)	75.9	93.7	98.8	92.7	92.2	88.8	88.7	90.2	720.9
Scenario A	77.7	96.1	100.9	96.3	97.5	93.5	91.9	93.6	747.5
Difference	*-1.8*	*-2.4*	*-2.1*	*-3.6*	*-5.3*	*-4.7*	*-3.2*	*-3.4*	*-26.6*
Recommended Variable Costs	107.7	116.3	124.6	133.6	143.2	153.5	164.6	175.7	1,119.2
Scenario A	108.2	117.1	124.9	134.4	144.5	154.7	165.1	176.3	1,125.2
Difference	*-0.5*	*-0.8*	*-0.3*	*-0.8*	*-1.3*	*-1.2*	*-0.5*	*-0.6*	*-6.0*
Recommended Fixed Costs	108.6	122.0	121.3	125.7	131.0	137.6	142.5	145.9	1,034.6
Scenario A	109.9	122.9	124.7	131.8	138.5	145.2	148.5	151.2	1,072.7
Difference	*-1.3*	*-0.9*	*-3.4*	*-6.1*	*-7.5*	*-7.6*	*-6.0*	*-5.3*	*-38.1*
Recommended Total Vessel Operations	292.2	331.9	344.7	352.0	366.4	379.8	395.7	411.8	2,874.7
Scenario A	295.8	336.1	350.5	362.5	380.5	393.4	405.5	421.1	2,945.4
Difference	-3.6	-4.2	-5.8	-10.5	-14.1	-13.6	-9.8	-9.3	-70.7

B. Management and Support Costs

In Ferries' Scenario A 16-year financial plan, operations management and support costs total $640.8 million or 15 percent of total operations costs. These costs were reviewed in the JTC's *Management and Support Costs Final Report,* July 2008. The report also found that management and support costs in fiscal year 2006 were 17 percent of total operations costs. The report found that management and support staff costs were reasonable, and made recommendations for modifications and reductions in non-staff management and support expenses.

1. Basis for Scenario A Management and Support Costs

Scenario A management and support costs were based on the 2007 route statement, with costs inflated from that base. As a result the Scenario A management and support costs do not reflect policy changes regarding charging other WSDOT program expenses to Ferries, nor total staffing costs. Basing credit card fee charges and fleet insurance costs on the 2007 route statement meant that these costs were not properly adjusted for revenue and fleet changes.

2. WSDOT Program Charges

The *Management and Support Costs Final Report* recommended that the Office of Financial Management (OFM), WSDOT, and the legislature review charges by WSDOT Executive Management (Program S) and Information Technology Services (Program C) to the Puget Sound Ferry Operations Account. The Governor's proposed 2009-11 biennium budget ceased charging the Puget Sound Ferries Operations Account for Program C and S expenses. The 2007 route statement includes both Program C and S charges and WSDOT Risk Management (Program U) expenses. Program U expenses are not charged to the Puget Sound Ferries Operations Account. The policy change on Program C and S charges and correcting the Program U charges reduces Ferries' operations expenses by $107.8 million over the 16-year plan period.

Recommendation #54. The legislature should adopt the policy proposed in the Governor's 2009-11 biennium budget of not charging the Puget Sound Ferry Operations Account for expenses incurred by WSDOT Executive Management (Program S) and Information Technology Services (Program C).

WSDOT Ferries Division Response. Concur

3. Staffing Costs

Management and support staffing costs included in Scenario A total $223.0 million in the 16-year plan.

Scenario A was based on staffing actual expenses from the 2007 route statements, which includes the impact of vacancies. The consultants revised staffing costs to reflect the full costs of all positions over the 16-year plan period, which resulted in an increase of $28.7 million.

4. Credit Card Fees

Ferries' Scenario A includes $29.4 million in bank charges for credit card processing fees. A recent analysis by Ferries[49] concluded that bank charges are approximately 1 percent of fare revenues. Calculating credit card fees at 1 percent of projected fare revenues results in an increase of $4.2 million over the 16-year plan.

5. Insurance

Ferries' Scenario A includes $57.5 million for the marine insurance program,[50] which was not revised to reflect the new vessels and retirement of older vessels. Based on the recommended fleet, the consultants revised the marine insurance program cost in the 16-year plan to $53.4 million or a $4.1 million decrease. The revised costs for the Scenario A fleet would be $59.9 million or a $2.4 million increase over the amount included in Scenario A.

6. Reservation Operations

Ferries' Scenario A 16-year financial plan includes $9.2 million for operations support for the proposed reservation system. This funding included costs that would be borne by WSDOT Information Technology Services (Program C) and would not be charged to the Puget Sound Ferry Operations Account. The reservation operations funding also included operations costs in the 2009-11 biennium that would not be incurred because the reservation system would not be fully operational. The consultants recommend reducing the reservation operations budget to $4.1 million in the 16-year plan.

7. Management and Support 16-Year Plan

The recommended management and support cost is reduced by $84.1 million over the 16-year financial plan. Cost reductions are the result of not charging the Puget Sound Ferry Operations Account for other WSDOT division expenses, excluding Program U charges, and re-calculating staff, credit card, insurance, and reservation operations costs. Management and support costs are reduced from 17 percent to 13 percent of total operations costs.

Table 18.
Management and Support Operations Costs Recommended vs. Scenario A
($ millions)

	09-11	11-13	13-15	15-17	17-19	19-21	21-23	23-25	16 YR	% of Operations
Recommended Staffing Cost	27.5	28.5	29.6	30.8	32.0	33.2	34.5	35.8	251.8	
Scenario A	24.2	25.2	26.2	27.2	28.3	29.4	30.6	31.8	223.0	
Difference	*3.3*	*3.3*	*3.4*	*3.5*	*3.7*	*3.7*	*3.8*	*3.9*	*28.7*	
Recommended Other State Support (WSDOT)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Scenario A	11.7	12.2	12.7	13.2	13.7	14.2	14.8	15.4	107.8	
Difference	*-11.7*	*-12.2*	*-12.7*	*-13.2*	*-13.7*	*-14.2*	*-14.8*	*-15.4*	*-107.8*	

[49] Decision packages for Ferries' 2009-11 budget include an analysis of credit card fees.
[50] The marine insurance program is reviewed in the *Management and Support Costs Final Report*, July 2008, pp. 17-21.

	09-11	11-13	13-15	15-17	17-19	19-21	21-23	23-25	16 YR	% of Operations
Recommended Reservation Costs	0.0	0.5	0.5	0.6	0.6	0.6	0.6	0.7	4.1	
Scenario A	1.0	1.0	1.1	1.1	1.2	1.2	1.3	1.3	9.2	
Difference	*-1.0*	*-0.5*	*-0.5*	*-0.6*	*-0.6*	*-0.6*	*-0.6*	*-0.7*	*-5.1*	
Recommended Credit Card Costs	3.2	3.5	3.8	4.0	4.3	4.6	4.9	5.2	33.5	
Scenario A	3.2	3.3	3.5	3.6	3.7	3.9	4.0	4.2	29.4	
Difference	*0.0*	*0.2*	*0.3*	*0.4*	*0.6*	*0.7*	*0.9*	*1.0*	*4.2*	
Recommended Insurance Costs	5.6	6.1	6.3	6.5	6.8	7.1	7.4	7.7	53.4	
Scenario A	6.2	6.5	6.8	7.0	7.3	7.6	7.9	8.2	57.5	
Difference	*-0.6*	*-0.4*	*-0.5*	*-0.5*	*-0.5*	*-0.5*	*-0.5*	*-0.5*	*-4.1*	
Recommended Other Costs	23.2	24.2	25.2	26.1	27.1	28.2	29.4	30.5	213.8	
Scenario A	23.2	24.2	25.2	26.1	27.1	28.2	29.4	30.5	213.8	
Difference	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	
Recommended Total M&S Operations	59.5	62.7	65.4	68.0	70.8	73.7	76.7	79.9	556.7	13%
Scenario A	69.5	72.4	75.4	78.2	81.3	84.6	88.0	91.4	640.8	17%
Difference	-10.0	-9.7	-10.0	-10.2	-10.5	-10.9	-11.3	-11.6	-84.1	

8. Alternatives

Alternatives to reduce insurance costs and to implement a marketing program are outlined below.

a. Marine Insurance Program

The *Management and Support Costs Final Report*, July 2008, recommends that OFM, WSDOT, and Ferries review the marine insurance program to determine whether it is cost-effective versus being self-insured, including terminal property, hull and machinery, war risk, and liability coverages. An alternative for the legislature to consider is to become self-insured for the property coverages—terminal property and hull and machinery—included in the marine insurance program. As discussed in the *Management and Support Costs Final Report*, claims recovery under the property coverages have totaled $5.9 million from 1990-2007 or approximately $350,000 per year (p. 19).

- ***Disadvantages:*** The state would not have property coverages, which would place Ferries' properties in the same situation as most other state owned properties.
- ***Cost Savings:*** During the 16-year plan period, $90.1 million would be saved if property coverages were eliminated from the marine insurance program. It may be necessary to increase funding in WSDOT Risk Management (Program U) to provide for the basic liability coverage. Program U currently pays only for the excess liability coverage.

b. Marketing Program

Ferries has no funding for marketing, yet Scenario A anticipates that Ferries will cover 80 percent of its operations cost from fares by, in part, reversing the decline in ridership. A marketing program, particularly emphasizing increasing off-peak ridership, could help Ferries attain the projected ridership and associated revenues.

- ***Cost:*** During the 16-year plan period, a marketing program starting at $500,000 per year in FY 2010 would cost $9.3 million or 0.3% of projected farebox revenue.

SECTION VI.
RECOMMENDED FINANCIAL PLAN AND POLICIES

This section summarizes the recommended service level and financial plan and recommends three financial policies for the legislature's consideration: creation of a vessel replacement reserve fund; zero basing the 2011-13 biennium operations budget; and adopting a farebox recovery calculation policy.

A. Recommended Service Level

The recommended service level is based on the ridership projections, vehicle level of service standard, and operational and pricing strategies discussed in Section II, and maintains existing sailings on all routes.[51] Vessel auto capacity increases in Scenario A on the Bremerton, Mukilteo, and Fauntleroy-Southworth-Vashon Triangle routes are delayed until the retirement of the Evergreen State class vessels, which is after the 16-year plan period. A smaller vessel is deployed on the Interisland route in the spring, summer and fall than in Scenario A, and the Fauntleroy-Southworth-Vashon route remains a three-vessel route.

B. Capital Finances

As shown in Table 19, the recommended plan has total capital expenses over the 16-year period of $2,466.2 million with a funding shortfall of $534.0 million. Of the capital expenses, 48 percent is for vessels, 34 percent for terminals, 9 percent for debt service, 7 percent for administration and indirect costs, and 2 percent for emergency repairs.

C. Operations Finances

As shown in Table 19, the recommended plan has total operations expenses over the 16-year period of $4,153.3 million with a funding shortfall of $106.2 million. Of the operations expenses, 70 percent is for vessel operating costs, 17 percent for terminal operations, and 13 percent for management and support costs. Farebox recovery rises in the recommended plan to 83 percent over the 16 years.

[51] The recommended service level and Scenario A both include restoration of full service to the Port Townsend route, which has been reduced to one-boat service since the retirement of the Steel Electric class of vessels in late 2007.

Table 19.
Recommended Financial Projection
($ millions)

Capital Program	09-11	11-13	13-15	15-17	17-19	19-21	21-23	23-25	16 Yrs.
Revenue*	410.5	327.5	199.3	137.3	209.8	225.4	217.8	204.6	1,932.2
Expenses									
New Vessel Construction	120.2	145.7	0.0	0.0	0.0	0.0	8.0	240.1	514.0
Vessel Preservation	50.3	31.1	67.0	89.8	86.0	87.6	101.5	107.5	620.8
Vessel Improvements	9.0	4.7	5.4	6.1	6.6	7.0	7.5	7.2	53.7
Terminal Preservation	50.7	69.3	55.9	173.2	95.9	129.2	49.3	49.2	672.7
Terminal Improvements	50.5	21.4	20.0	51.0	22.1	0.0	0.0	0.0	165.0
Emergency Repairs	6.3	4.6	4.9	5.2	5.6	6.0	6.4	6.9	46.0
Admin, Support, & Indirect	22.8	20.7	21.1	21.8	22.5	23.4	24.4	25.2	181.9
Debt Service	33.8	31.8	31.8	31.5	31.1	27.8	19.0	5.2	212.1
Total Capital Expenses	343.6	329.4	206.1	378.6	269.8	281.1	216.1	441.4	2,466.2
Capital Surplus or Shortfall	66.9	(1.9)	(6.8)	(241.3)	(60.0)	(55.7)	1.7	(236.8)	(534.0)
Operating Program	**09-11**	**11-13**	**13-15**	**15-17**	**17-19**	**19-21**	**21-23**	**23-25**	**16 Yrs.**
Revenue*	432.4	439.0	454.3	476.0	509.4	544.6	578.6	612.8	4,047.1
Expenses									
Fuel (Nov. 2008 forecast)	75.9	93.7	98.8	92.7	92.2	88.8	88.7	90.2	720.9
Non-Fuel Vessel Costs (labor, maintenance)	216.4	238.2	245.9	259.4	274.2	291.1	307.1	321.6	2,153.8
Terminal Costs	68.1	72.7	77.2	85.5	94.4	100.1	106.2	112.8	717.0
Management & Support Costs	59.5	62.7	65.4	68.0	70.8	73.7	76.7	79.9	556.7
OFM Charges for Labor Relations	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8
Marine Employee Commission	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	4.1
Total Operating Expenses	420.3	468.0	488.0	506.1	532.2	554.2	579.3	605.2	4,153.3
Operating Surplus or Shortfall	12.1	(29.0)	(33.7)	(30.1)	(22.8)	(9.6)	(0.7)	7.6	(106.2)
Farebox Recovery**	78%	76%	79%	81%	83%	85%	87%	88%	83%

*Revenue estimates revised by House and Senate Transportation Committee staff to reflect 2008 session 16-year financial plan, capital fund balance, and November farebox and ancillary revenue forecasts. Revenues include direct distribution of gas tax and licenses and permits; administrative transfers from the motor vehicle and multi-modal vehicle accounts; and, in the operations account, farebox, fuel surcharge, and miscellaneous revenues.

**Farebox recovery is the percentage of operations expenses that are covered by farebox, fuel surcharge, and other associated revenues.

D. Financial Policies

1. Vessel Replacement Reserve

The timely replacement of vessels as they come due for retirement is critical to the provision of stable service. As discussed in the *Auto-Passenger Vessel Replacement and Preservation Final Report*, January 2008, the expected service life of a vessel is 60 years. Under the recommended financial plan, commencing with the 2023-25 biennium, Ferries will need to build six (6) 144-auto passenger vessels to replace the retiring Evergreen State class and Super class vessels. Following these replacements Ferries will need to replace the two Jumbo Mark I class vessels (188-auto) and six Issaquah class vessels (124-auto/Sealth 90-auto) between 2031 and 2045.

The consultants recommend that the legislature consider the establishment of a vessel replacement fund that would set aside funds for the periodic replacement of vessels. Such a fund would stabilize, if sufficiently funded, Ferries' finances.

Recommendation #55. The legislature should consider the establishment of a vessel replacement fund that would set aside funds for the periodic replacement of vessels.

WSDOT Ferries Division Response: Concur

2. Operations Budget – Zero Base

The State of Washington zero bases (i.e., starts with a completely new budget) the capital program budget each biennium. The State uses an incremental approach to budgeting for operations, i.e., starting with the last budget as a base, to develop future budgets. For Ferries, this approach has become very complex as a result of the number and frequency of vessel changes that have occurred since the 2007 retirement of the Steel Electric class vessels. The consultants recommend that the legislature request a zero based Ferries operations budget for the 2011-13 biennium.

Recommendation #56. The legislature should request a zero-based Ferries operations budget for the 2011-13 biennium.

WSDOT Ferries Division Response: Concur

3. Farebox Recovery

Farebox recovery is a key indicator in setting ferry fares and is often used to compare Ferries' performance to that of other transit agencies. It is, therefore, important that the legislature and the public have a clear understanding of what is included and excluded as costs in the farebox recovery calculation.

The JTC's *Management and Support Costs Final Report*, July 2008, recommended that OFM, WSDOT, and the Legislature agree on a consistent method for calculating farebox recovery. The consultants recommended that only costs charged to the Puget Sound Ferry Operations Account be included in the calculation of farebox recovery, and that all such costs be included unless directed by the legislature to exclude particular costs.[52] This recommendation would mean that WSDOT Risk Management (Program U) costs, which are not charged to the Puget Sound Ferry Operations Account, would not be included in the calculation of farebox recovery. In the FY 2007 route statements Program U expenses of $5.3 million were included in the calculation of farebox recovery. This recommendation would also mean that Marine Employee Commission and OFM charges to the Puget Sound Ferry Operations Account would be included in the calculation of farebox recovery.

Recommendation #57. The legislature should establish its intent to have farebox recovery calculated on a consistent basis, including only costs charged to the Puget Sound Ferry Operations Account and including all such costs (i.e. Marine Employee Commission and OFM charges) unless specifically excluded by the legislature.

WSDOT Ferries Division Response: Concur

[52] The legislature has previously directed Ferries to not include security costs in the calculation of farebox recovery.

Joint Transportation Committee

Long-Range Finances Report Appendices

Washington State Department of Transportation Ferries Division Financing Study II

Prepared For:
Joint Transportation Committee
Washington State Legislature

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Contents

APPENDIX I.
JTC FERRY FINANCE STUDY II RECOMMENDATIONS

Joint Transportation Committee Ferries Finance II Studies Recommendations

Area	Recommendation	Ferries Scenario A	Recommended – Long Range Finances Report (if different from Scenario A)
Auto-Passenger Vessel Preservation and Replacement Final Report – January 10, 2008			
Vessel Condition	1. For the Steel Electrics and the *Rhododendron:* a. Replace the active vessels expeditiously. b. Expedite Steel Electric and *Rhododendron* replacement procurement process.	1. Steel Electrics and *Rhododendron* replaced with Island Home vessels.	
	2. Consider rebuild of the *Hyak.*	2. Hyak rebuild in 2009-11 biennium.	
	3. Reduce drydock and other planned out of service times. a. Review shipyard contracts. b. Conduct preservation work while vessels are underway.		3. Recommends focus on reducing out of service time.
	4. Maintenance and preservation: a. Institute a bilge and void maintenance program. b. Institute a visual inspection/audio gauging steel preservation program for older vessels. c. Institute an integrated coating program. d. Consider standardized cabin maintenance materials. e. Provide preservation funding for inactive vessels or retire them out of the fleet.	a. Bilge and void maintenance program funded. b. Visual inspection/audio gauging funded. c. Integrated coating program development funded. d. Standardized materials already implemented. e. Preservation of reserve vessels in 16-year financial plan.	

Area	Recommendation	Ferries Scenario A	Recommended – Long Range Finances Report (if different from Scenario A)
Vessel Replacement	1. Develop a consistent and legislatively reviewed vessel rebuild/replacement plan.	1. Replacement plan included.	1. Modified plan to reflect retirement schedule.
	2. Relate increases in vessel capacity to ridership forecast, level of service standard, operational changes, and terminal design standards.	2. Proposed increases in vessel capacity based on new ridership forecast, vehicle level of service standard, operational changes & preliminary terminal design standards.	2 Vessel capacity increases delayed until existing vessel retirements.
	3. Consider alternatives to new vessel construction to increase capacity.	3. Operational and pricing strategies proposed to maximize use of existing assets.	
	4. Prioritize and commit vessel replacement funding.	4. Proposes building 9 new vessels in 16-year plan.	5. Proposes building 5 new vessels in 16-year plan.
	5. Use route-based planning.	5. Terminal & vessel plans integrated by route.	
	6. Gauge community reaction to vessel capacity changes.	6. Ferries conducted meetings and outreach in every community served to gauge reactions to Scenario A & B.	
Capital Financing	1. Implement ESHB 2358: a. Use revised definition of capital. b. Use revised definitions of improvement and preservation.	a. Uses revised definition of capital. b. Uses revised definitions of improvement and preservation.	a. Eagle Harbor improvement project for superfund site monitoring and vessel indirect expenses for stability analysis support for operations recommended as more appropriately operations.

Area	Recommendation	Ferries Scenario A	Recommended – Long Range Finances Report (if different from Scenario A)
	c. Allocate systemwide and administrative capital costs to vessel projects. d. LCCM and asset management program.	c. Allocates systemwide and administrative capital costs to vessel projects. d. LCCM used.	d. Recommends asset management program in terminal controls be shared with vessels.
	2. Vessel preservation funding: a. Improve preservation program management.		a. Recommends project controls group of Terminal Engineering be shared with vessels. a. Recommends focus on out of service time. a. Recommends constructability review of preservation projects and reduction in funding due to constructability issue.
	b. Tie vessel preservation funding to the vessel replacement plan. c. Prioritize vessel preservation over vessel improvement funding.	b. Vessel preservation funding tied to replacement plan. c. Vessel preservation prioritized over improvement funding.	
	d. Consider increasing preservation funding.		d. Recommends increasing topside painting funding to minimize out of service time.
	e. Do not reduce preservation funding to pay for new vessels.	e. Preservation funding not reduced to pay for new vessels.	e. Recommends extended preservation of vessels that would remain in the fleet under

Area	Recommendation	Ferries Scenario A	Recommended – Long Range Finances Report (if different from Scenario A)
			the recommended fleet plan.
	3. The vessel emergency repair budget should not be used for planned maintenance and inspections of inactive vessels.	3. Emergency repair budget does not include planned maintenance & inspections of reserve, inactive vessels.	
	4. Increase vessel replacement funding.	4. Requests funding for 9 new vessels.	4. Recommends funding for 5 new vessels based on retirement schedule.
	5. Prioritize vessel funding over terminal improvement funding.	5. Reduction in terminal relocations & expansions from previous plan	5. Recommends $225.9 million reduction in terminal improvements in 16-year plan.
Maintenance and Repair Operating Finance	1. Consider internal realignment to increase maintenance and preservation division management.	1. Merged vessel engineering and preservation and maintenance divisions.	
	2. Reduce planned out of service credit drydocking time.		2. Recommends focus on out-of service time.
	3. Consider implementation of State Auditor's recommendations on Eagle Harbor double shifts.	3. Ferries response indicates double shift too expensive based on staff overtime, travel, and other costs.	3. Recommends Ferries re-consider and include an evaluation of the impact on out of service time of a double shift.
	4. Review 2007-09 biennium repair budget.	4. 16-year operating budget includes adjustment to repair budget.	
Capital Program Staffing and Administration Cost Final Report – April 10, 2008			
Staffing Levels and Vacancies	1. Current capital position vacancies should not be filled until the Draft Long-Range Plan is complete and decisions on staffing can be informed by the Plan. 2. Future vacancies in capital staff positions should not be	1. 2008 legislature (ESHB 2878) required Ferries to maintain staffing at or below Jan. 1, 2008 levels until completion of plan.	

Area	Recommendation	Ferries Scenario A	Recommended – Long Range Finances Report (if different from Scenario A)
	filled until the completion of the Long-Range Plan, unless absolutely critical to project delivery.		
Administrative Work Order	1. Ferries should distinguish administrative work order charges to projects from direct staff charges to projects in order to facilitate legislative and management understanding of capital project costs.	1. Cost allocation methodology implemented. Shows administrative and indirect costs separately.	
	2. Terminal Engineering should review its structure and anticipated ongoing charges to the administrative work order.		2. Recommends reductions in Terminal Engineering indirect costs and sharing Project Controls with vessel engineering.
	3. Ferries should review staff authorized to charge to the administrative work order and fully implement the established procedures for authorizing such charges.		
Project Work Orders	1. Ferries should review staffing in its engineering divisions to ensure core competency in, and a focus on, terminal and vessel preservation, with staffing sufficient to implement the preservation program proposed in the upcoming Long-Range Plan.	1. Ferries realigned vessel divisions as part of an effort to ensure proper focus on preservation.	
	2. Ferries should clearly distinguish responsibility for terminal improvement projects, and for vessel construction and systemwide vessel improvement projects, from its preservation responsibility in order to ensure a focus on preservation.		2. Recommends consideration of third party management of terminal projects over $50 million and of new vessel construction projects.
Operations Construction Support Capital Charges	1. Ferries should evaluate operating budget staff charges to the terminal operations construction support project to determine whether they are appropriate capital program expenses.		
Other Operating Staff Capital Charges	1. Ferries should review and determine whether charges to the capital program from information agents, vessel engineering crews, vessel deck crews, and terminal		

Area	Recommendation	Ferries Scenario A	Recommended – Long Range Finances Report (if different from Scenario A)
	staff are appropriate capital charges, and whether these charges should be separately identified in project budgets.		
	2. Ferries should develop and implement a policy on charges by information desk, terminal, vessel deck, and vessel engineering staff to the capital program.		
Use of On-Site Consultants	1. Terminal Engineering should continue to review and, where appropriate, reduce expenditures on on-site consultants.	1. Terminal Engineering has continued to reduce use of on-site consultants.	1. Recommends further reductions in terminal indirect consultant costs.
	2. The use of on-site consultants should be based on Ferries' decisions on the delivery method for, and scheduling of, preservation and terminal improvement/new vessel construction, and vessel systemwide improvement projects.		2. Recommends examining third party management of terminal construction projects over $50 million and vessel construction.
Scheduling System Cost	1. WSDOT should review the cost-benefits of continued use of the Primavera scheduling system for Ferries.	1. Funding for Primavera & implementation of WSDOT Project Management and Reporting System (PMRS).	1. Recommends not funding PMRS & Primavera based on consultants' assessment they are not appropriate for the scale of project typically done by Ferries as compared to highway projects.
Identifying Administrative Expenses	1. Ferries should separately identify the capital administration services and charges for review by the legislature.	1. Ferries separately identified administration, vessel indirect, and terminal indirect costs.	
Organization Chart	1. Ferries should develop and present to the legislature an organization chart that shows only funded positions and denotes which legislatively adopted budget the chart represents.	1. Organization chart not included.	
Baselines and Performance	1. Ferries should develop baseline information and performance measures for the percentage of the	1. Not done.	1. Percentages calculated.

Area	Recommendation	Ferries Scenario A	Recommended – Long Range Finances Report (if different from Scenario A)
Measures	capital program and individual capital project budgets that should be devoted to capital staffing and administration expenses.		
Management and Support Operating Costs Final Report – July 8, 2008			
Ferries Non-Labor Management and Support Costs	1. OFM, WSDOT and Ferries should review the marine insurance program to determine whether it is cost-effective versus being self-insured, including the Ferries terminal property, hull and machinery, war risk, and liability coverages.	1. No changes in marine insurance program.	1. Modified costs of insurance program to reflect changing fleet. 2. Alternative presented to eliminate property coverages.
	2. If OFM, WSDOT and Ferries conclude that it is cost-effective to continue to retain commercial insurance, the coverages and deductibles should be reviewed. Consideration should be given to optional deductible limits above the current $1 million.		
	3. Ferries should ensure that it has a full understanding of the coverages provided if it continues to procure commercial insurance. Ferries should also ensure that, as it implements the administrative cost allocation requirements of ESHB 2358, consideration is given to the insurer's requirements to distinguish direct labor from administrative overhead costs that are allocated to capital projects. This will facilitate Ferries' claims management.		
	4. Ferries, WSDOT, and OFM should review Ferries' temporary employment expenditures and determine which, if any, of the temporary positions should be created as permanent positions, with particular attention to those used to meet new workload requirements.		
	5. Ferries should consider accepting only Visa and MasterCard, which have lower merchant discount fees.	5. Change not implemented. Ferries determined there were not extra merchant	5. Recommends adjusted credit card fee budget in 16-year plan to reflect revenues.

Area	Recommendation	Ferries Scenario A	Recommended – Long Range Finances Report (if different from Scenario A)
		fees.	
	6. Ferries should review its use of long-term on-site consultants.	6. Operations use of long-term on-site consultants reduced partially through creation of positions.	
WSDOT Management and Support (Other State Support)	1. The legislature and WSDOT should develop a consistent policy on expenses to be charged from the Motor Vehicle Account to the Puget Sound Ferry Operations Account. The policy should specifically address whether administrative indirect charges, such as WSDOT Executive Management, are to be charged to the Ferry Operations Account.	1. Expenses from WSDOT divisions assumed to be charged to the Puget Sound Ferry Operations Account.	1. Recommends acceptance of Governor's budget proposal to no longer charge the Puget Sound Ferry Operations Account for WSDOT Executive Management (Program S) and Information Technology Services (Program C) costs.
	2. If the policy is to include Motor Vehicle Account administrative indirect expenses in charges to the Puget Sound Ferry Operations Account, such charges should be distinguished from costs incurred in the direct delivery of ferry services.		
	3. The legislature and WSDOT should develop a consistent policy on expenses to be charged directly to the Ferries operating budget.	3. Reflects move of payroll function to WSDOT with no charge back to the Puget Sound Ferry Operations Account or Program X.	
	4. WSDOT should review the consistency of its practice in charging for Office of Equal Opportunity (OEO) officers. The Ferries Executive Management budget should not be charged for the expense of an OEO officer unless other WSDOT budgets are also charged for such expenses.	4. OEO officer continues to be charged to Program X.	
	5. WSDOT should continue the practice adopted in the 2007-09 biennium of not charging sub-program C1	5. Program C1 charges not included.	5. Recommends no Program C charges to the Puget Sound

Area	Recommendation	Ferries Scenario A	Recommended – Long Range Finances Report (if different from Scenario A)
	Information Technology Administration expenses to the Puget Sound Ferry Operations Account.		Ferry Operations Account.
	6. WSDOT should make a determination of whether Information Technology (Program C) expenses should continue to be charged to the Puget Sound Ferry Operations Account, as part of its policy review of charges from the Motor Vehicle Account to the Puget Sound Ferry Operations Account.	6. Program C charges included.	6. Recommends no Program C charges to the Puget Sound Ferry Operations Account.
	7. Ferries should not include risk management administration fees in its calculation of farebox recovery because the charge is no longer allocated between WSDOT and Ferries.	7. Not included in farebox recovery calculation.	
	8. In addition to reviewing the Marine Insurance Program, WSDOT, OFM, and Ferries should review the range of costs incurred by the State in providing insurance, risk management services and claims defense to determine what, if any, costs could be reduced.	8. No changes made.	
Management Communication and Oversight	1. Ferries and the legislature should develop a policy on what costs are to be included in farebox recovery. The consultants recommend that all costs charged to the Puget Sound Ferries Operations Account be included in farebox recovery, as this methodology would tie most directly to the level of fares needed to meet the legislatively adopted 16-year financial plan.		1. Recommends inclusion of all costs charged to the Puget Sound Ferry Operations Account, unless specifically excluded by legislative direction, and only costs charged to the Puget Sound Ferry Operations Account. This would exclude Program U (WSDOT Risk Management Services) costs from the calculation of farebox recovery.
	2. The legislature should clarify its intent in excluding security costs from the calculation of farebox recovery		2. Senate adopted and House Transportation Committee

Area	Recommendation	Ferries Scenario A	Recommended – Long Range Finances Report (if different from Scenario A)
	so that WSDOT expenses can be properly included or excluded based on that direction.		adopted transportation funding bills (as of 4-7-09) do not contain language excluding security costs from the calculation of farebox recovery.
	3. In order to provide consistent communication with the legislature, Ferries should use a uniform definition of Ferries management and support costs based on costs included in the calculation of farebox recovery.	3. Management and support costs same as used in 2007 route statements.	
	4. Ferries should provide a biennium farebox recovery calculation to align with the State's budget periods.	4. Biennium calculation of farebox recovery included.	
Non-Labor, Non-Fuel Operating Costs Final Report – July 8, 2008			
Terminal Operations	1. Ferries should enter into a competitive process for terminal agent services as the contracts expire to ensure that it is receiving the best combination of service and value	1. Ferries concurred with recommendation at Friday Harbor, Lopez, and Orcas. Noted unique circumstances may affect contracts at Sidney and Shaw.	
Auto-Vessel Sizing and Timing Final Report – April 2009			
Fleet Preservation	1. Ferries should reduce average planned out of service time from seven weeks per vessel per year to six weeks. This can be achieved by consolidating Eagle Harbor work with other shipyard work, focusing on reducing time spent on topside painting, designing vessels with aluminum superstructures and other features that reduce required maintenance, and requesting the Coast Guard to allow underwater inspection in lieu of dry docking.	1. Island Home vessels are built with aluminum superstructures and Ferries has included funding for aluminum superstructures in new 144-auto vessels.	1. Recommends 30% increase in topside painting budgets to allow overtime and expedited service.

Area	Recommendation	Ferries Scenario A	Recommended – Long Range Finances Report (if different from Scenario A)
	2. The legislature should recognize that in order to reduce out of service time and reduce the fleet size, the per-vessel expenditure on maintenance and preservation may increase, and therefore, it will be necessary to provide adequate maintenance and preservation funding for each vessel in the fleet in order to minimize service disruption.		1. Reduced overall preservation funding due to need for constructability review. Review of Ferries' preservation expenses found that preservation budget is consistently under spent. Recommends 30% increase in topside painting budgets and increased funding for rebuild of *Hyak* motor.
	3. Assuming a six-week annual maintenance period, Ferries should plan on a 21-vessel fleet to provide the baseline 2030 service hours. This size fleet will provide adequate maintenance relief and 46 weeks of crewed vessel emergency response capacity. Additional vessel acquisitions could then be used to expand service, not to deliver the baseline service.	3. Ferries plans on a 22 vessel fleet by 2030 to deliver baseline service. (An additional vessel is planned to break up the Fauntleroy-Vashon-Southworth Triangle route.)	3. Within 16-year financial plan period, recommended fleet has 22 vessels to deliver the baseline service.
	4. Ferries should implement a system to use vessels that are in maintenance for emergency response.	4. Ferries did not concur with recommendation.	
Fleet Composition	1. Ferries should plan on the consultant active vessel deployments by route for the delivery of the baseline service in 2030.	1. Ferries' Scenario A plans for larger vessels on some routes than recommended deployment.	1. Recommends modified deployment plan during 16-year plan, with smaller vessels on the Interisland, Fauntleroy-Vashon-Southworth Triangle, Mukilteo, and Bremerton routes.
	2. Ferries should plan for a 21-vessel fleet composed of: five jumbo (188-202 auto), six large (144-auto), five medium (124-auto), one mid size (90-auto), and four small (64-auto) vessels for the delivery of the baseline services.	2. Ferries Scenario A plans for a 23-vessel fleet with 22 vessels for the baseline service and a vessel added to provide direct rather than	2. Recommended fleet does not provide direct service on the triangle route. During the 16-year plan period, assumes a 22-vessel fleet composed of five

Area	Recommendation	Ferries Scenario A	Recommended – Long Range Finances Report (if different from Scenario A)
		triangle service on the Fauntleroy-Vashon-Southworth Triangle route.	jumbo (188-202 auto), four large (144-auto), five medium (124-auto), three mid size (87 & 90-auto), and five small (34 & 64-auto) vessels for the delivery of the baseline services.
Fuel Conservation	1. Ferries should analyze the potential for slowing vessel speeds an average of 0.5 to 1.0 knots in order to reduce fuel consumption. This analysis should include a route-by-route review, including the impact on the number of sailings.	1. Ferries included savings by slowing vessels 0.75 knots outside the summer season.	1. Recommends slowing vessels by an average of 0.5 knots in summer and 0.75 knots the rest of the year.
	2. Ferries should assess the feasibility of slowing at-dock RPMs from 60 to 30 in order to conserve fuel.	1. Ferries determined this is not feasible.	1. Recommends positive restraint study focus on operational or low cost capital solutions to conserve fuel during dockings.
	3. As part of the pre-design process for constructing 144-auto vessels in the 2021-2030 time period (four (4) vessels in the baseline fleet or six (6) in the recommended fleet), Ferries should provide the legislature with a cost-benefit analysis of an aluminum superstructure and other design modifications that might increase fuel efficiency.	1. Ferries requested funding for aluminum superstructures on 144-auto vessels.	
Vessel Acquisition	1. Ferries should acquire vessels in two waves: 2009–2012: 4 new 64-auto vessels; and 2020-2030: 6 new 144-auto vessels	1. Scenario A acquires 3 Island Home vessels then immediately begins construction of 6 new 144-auto vessels before the recommended time frame.	1. Recommends acquiring 4 new 64-auto vessels in the 2009-12 time period and the first of six new 144-auto vessels starting in the 2023-25 biennium.
	2. The legislature should consider opening vessel construction to national competition by determining the appropriate balance between Ferries' new vessel		

Area	Recommendation	Ferries Scenario A	Recommended – Long Range Finances Report (if different from Scenario A)
	construction costs, the potential for federal funding, and the policy goals of the State.		
Service	1. Ferries should consider additional sailings and/or modifications to vessel service hours as ways to improve service before considering adding vessels to the fleet to improve service.	1. Not done in Scenario A.	1. Identify alternatives for Port Townsend, San Juans, and Sidney routes to match existing service with smaller fleet or improve service without adding vessels.

APPENDIX II.
SCENARIO B SUMMARY

Ferries' *Revised Draft Long-Range Plan* Scenario B is a service plan that could be implemented if the State were not able to provide new revenues and Ferries needed to operate a reduced marine highway system. Scenario B would close the Sidney route and reduce service significantly on several domestic routes. Service would be provided with a 17-vessel fleet, six fewer than Scenario A. Scenario B also envisioned a partnership with local governments to provide passenger-only ferry service to fill in the gaps in traditional auto-passenger ferry service provided by the State.

Operating Program

Scenario B significantly reduces the scope of Ferries operations beginning in the 2009-11 biennium, with further reductions in the 2011-13 biennium. Cuts were focused on routes that were generally poor financial performers or proposed service reductions were for low productivity periods. Total service hours were reduced by 17 percent.

2009-11 Biennium

- *Close Sidney route in September 2009*. Provide San Juan domestic service with two Super (144-auto) vessels and the 90-auto *Sealth* in the fall, winter and spring, and three Super class vessels and the *Sealth* in the shoulder and summer seasons.
- *Downsize the Point Defiance-Tahlequah route* by substituting the *Hiyu* (34-auto*)* and retiring the *Rhododendron* (48-auto).
- *Keep Port Townsend-Keystone* as a one-boat operation, which is the level of service provided since the 2007 retirement of the Steel Electric class vessels.

2011-13 Biennium

- *Reduce Seattle-Bremerton* to one boat, which would be a medium size vessel (124-auto) all year except the summer when a jumbo size vessel would be deployed (188-auto).
- *Reduce Edmonds-Kingston service*. Eliminate weekday night service between mid-October and mid-May.
- *Reduce service for Fauntleroy-Vashon-Southworth Triangle Route* to two medium (124-auto) vessels.

Capital Program

Capital needs are reduced from Scenario A levels by retiring some vessels early and not replacing them. Instead of acquiring three (3) small vessels and six (6) large vessels over the 16-year plan, Ferries would acquire three (3) small vessels and one (1) large vessel. Ferries also proposed a $92.2 million reduction of the $376.0 million in terminal improvements proposed in Scenario A, including reductions in dwell time improvements, transit-related projects, and walkway improvements.

Funding Implications

Scenario B budgets a 16-year operating surplus of $109 million, compared to a $222 million operating deficit in Scenario A. This is accomplished by focusing on routes with higher farebox recovery rates. Ferries estimated farebox revenues would be reduced by 6 percent while expenses would be cut by 14 percent.

APPENDIX III.
JTC POLICY GROUP 2008 STATUS REPORT

JOINT TRANSPORTATION COMMITTEE POLICY GROUP
FERRY SYSTEM REVIEW PHASE II
STATUS REPORT
December 2008

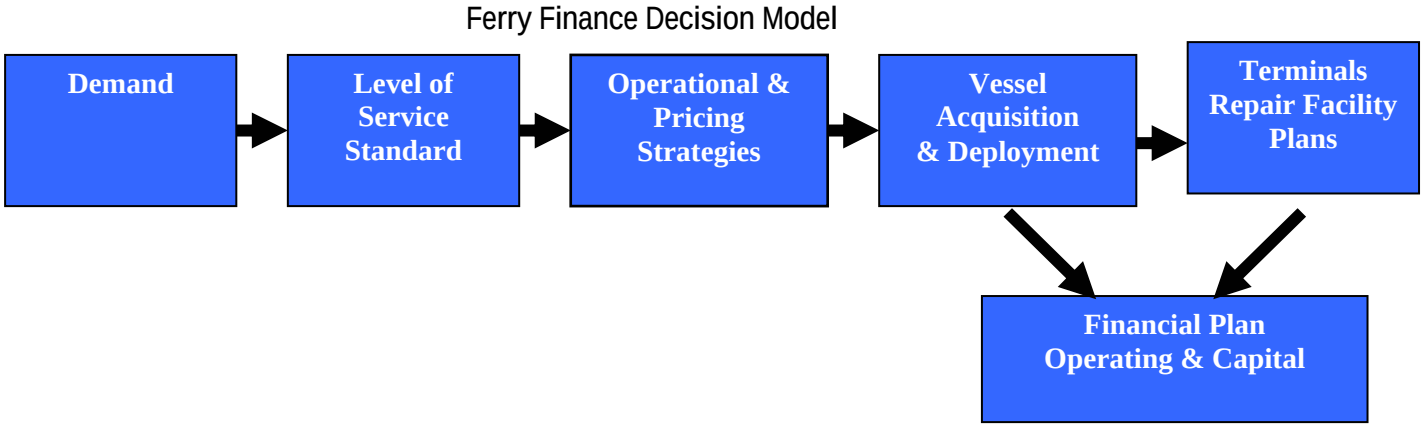
Beginning in 2006, the Joint Transportation Committee (JTC) began an extensive review and evaluation of the Washington State Ferry System (WSF). The ferry system has been described as unsustainable because of the gap between currently allocated funds and what is required to preserve the system in its current form. The JTC Ferry Study goal is to provide the Legislature with the information it needs to plot a course for the future of the ferry system.

I. Background

Phase I of the JTC ferry financing study was conducted during the 2006 interim. The legislature directed the JTC to evaluate WSF's operating and capital programs, including: ridership, revenue, and cost forecasts; and capital project scoping, prioritization, and cost estimating (Chapter 370, Laws of 2006 (SSB 6241)). WSF had just released its 2006 *Draft Long-Range Strategic Plan* as the phase 1 study was being undertaken.

Phase I evaluated the 2006 WSF *Draft Long-Range Plan* and found that there was not sufficient reliable data to evaluate and craft a long-range plan. The study raised fundamental questions about WSF's assumptions on future ridership, customer needs, planned terminal improvements, terminal preservation costs, and operating costs. The information necessary to address those questions was not available at the time of the phase I study. Accordingly, the legislature directed further analysis.

The JTC study proposed a ferry financing decision model as a framework for legislative ferry investment decisions. Under the model, ridership demand, level of service standards, and pricing and operational strategies are the basis for long-range vessel and terminal capital and operating financial decisions:



Utilizing the ferry finance decision model required gathering and analyzing new data and modifying assumptions, which led to phase II of the JTC ferry study.

JTC Ferry System Review – Phase II

ESHB 2358 (2007) and related budget provisos identified and funded phase II of the JTC ferry study. Based on the recommendations of phase I of the study, the Legislature directed WSF to adopt adaptive management practices[1] in its operating and capital programs in order to keep costs as low as possible while continuously improving the quality and timeliness of service. The legislation required coordinated actions by WSF, the Washington State Transportation Commission (WSTC), the Office of Financial Management (OFM), and the JTC to conduct a comprehensive analysis of the Washington State Ferry System. This work informed the revised *Draft Ferries Long-Range Plan* issued December 2008.

The JTC, pursuant to budget provisos, appointed a Policy Workgroup to oversee implementation of ESHB 2358 (see attached list of members). The Policy Workgroup met regularly during the 2007 and 2008 interims to review and provide direction to the study.

II. Summary

All tasks assigned in ESHB 2358 and associated budget provisios have either been completed or are underway.

- Demand Analysis: In order to develop a long-range plan, WSF needed better information about riders and projected future demand.
    - Customer Survey: The WSTC's customer survey has provided the first comprehensive view of Ferries' customers – enhancing understanding of ridership patterns and of customer satisfaction, concerns, and likely response to new initiatives.
    - Ridership Forecast: WSF and its technical team have developed a revised and greatly improved ridership forecast. This improvement allows a higher level of confidence when assessing the system's future needs.

- Level of Service: Phase I of the study identified a risk of overbuilding the system in response to a level of service standard focused on peak traffic periods. WSF has proposed revising the level of service measure to capture demand system-wide rather than just during peak period service. This provides a more reliable measure of future service needs.

- Operating and Pricing Strategies: WSF's capacity issues are driven by vehicle capacity during peak sailings. Phase I of the JTC study recommended using operating and pricing strategies to ease the strain on peak vehicle capacity by increasing walk-on use of ferries and shifting vehicle demand to non-peak sailings. WSF's *2008 Draft Long-Range Plan* proposes the following strategies:

[1] Adaptive management means a systematic process for continually improving management policies and practices by learning from the outcomes of operational programs (ESHB 2358, Section 3 (1)).

- Increasing walk-ons: WSF proposes to increase walk-ons by: (1) improving coordination with transit; and (2) increasing walk-on fares at half the rate of vehicle fares.
- Leveling Vehicle Demand: WSF recommends using vehicle reservations to level peak vehicle demand. The fare would be pre-paid when reserved, with no additional charge for the reservation.

- Vessel Acquisition and Deployment: The JTC's studies recommended WSF prioritize vessel preservation and acquisition over terminal improvements. WSF's revised *Draft Long-Range Plan* reflects that shift by including a 22-year plan for retiring, acquiring, and deploying vessels and reducing proposed investments in terminal expansions.

- Terminal Plans: The 2006 Legislature placed the extensive terminal improvement projects included in WSF's 2006 long-range plan on hold. The lower ridership projections and demand management strategies developed under phase II of the JTC ferry study have allowed WSF to reduce the scope of its terminal projects. Of three originally proposed terminal re-locations, only moving the Mukilteo terminal remains in the plan. Better data and more reliable assumptions from the study have allowed a reduction in the scope of the Anacortes, Bainbridge, Port Townsend, and Seattle terminal projects.

- Cost Analysis: Phase II of the JTC study required a comprehensive review of WSF's operating and capital program costs. This review produced a series of cost reduction recommendations. WSF and the Washington State Department of Transportation (WSDOT) have largely concurred with these recommendations. The recommendations range from reducing capital staffing and administration costs to reducing vessel insurance costs, modifying vessel deployment to decrease operating costs, and increasing vessel fuel efficiency.

WSDOT and WSF leadership have come a long way in rethinking their understanding of ferry riders, how WSF provides service to the state, and implementing the adaptive management practices required by ESHB 2358. Without this work, WSF and the Legislature would face an even more daunting task planning the future of the ferry system in the current economic climate.

III. Implementing the Ferry Finance Decision Model

In phase II of the JTC Ferry Study, WSF, the JTC, and the WSTC gathered and analyzed the data necessary to implement the ferry finance decision model.

Step1. Demand

Understanding user needs and projecting future ridership is the critical first step in ferry planning. To improve understanding of WSF's key markets and customers, the Legislature required the WSTC to conduct a customer survey, to be repeated every two years. WSF was directed to work with the JTC to improve its ridership projections.

Why is this important?

Survey

The customer survey conducted by the WSTC:

1. Contradicts some prior assumptions about ferry customers (that the vast majority are commuters) and the cause of recent declines in ridership (that rising fares was the primary cause of people no longer riding ferries).
2. Provides a basis for gauging potential reactions to operational and pricing strategies before they are implemented.
3. Provides a foundation for adaptive management practices, the essence of which is to consistently monitor the impact of changes on customer behavior and satisfaction and adapt as needed.

Improved Ridership Projection:

1. The revised ridership forecast shows projected ridership increasing at almost half the rate of the prior forecast. The prior model projected a 68 percent increase by 2030. The revised model projects a 36 percent increase.
2. The ridership projection provides a more realistic basis for planning service and capital investments. For example, expected passenger and vehicle ridership is the basis for determining the size of vessels, terminals, and vehicle holding areas.
3. WSF can set a reasonable ridership goal that can be monitored. If WSF's ridership varies from the projections, ongoing customer survey information will help identify the causes and provide a basis for management and legislative response.

Market Survey – Methodology & Results

"Accurate user and market information is vital in order to find ways to maximize the ferry systems' current capacity and to make the most efficient use of citizens' tax dollars" (ESHB 2358, Section 1). Prior to the enactment of ESHB 2358, the state had limited information on WSF's riders and markets.

WSTC's customer survey provides a robust source for in-depth information on rider characteristics and needs. The survey included focus groups, a quantitative survey of 13,000 riders on-board Washington State ferries, a general customer area and infrequent rider telephone survey of 1,200 Puget Sound residents, and a freight customer survey. In addition, two online surveys were completed to understand ferry customers' response to potential pricing and operational strategies.

In November 2008 the WSTC issued its' final market survey report. The extensive survey findings provide the most complete and comprehensive understanding of ferry riders to date. Significant findings include:

- *WSF's regular riders are :*
    - Somewhat older (median age 51) than the general population in the ferry-served communities (median age 45)

    - Generally more affluent (median household income $80,703) than the general population in ferry-served communities (median household income $58,159).
    - Diverse, with occasional riders (less than seven one-way trips a month) accounting for 44 percent of all riders; regular riders (seven to 24 one-way trips per month) totaling 28 percent; and frequent riders (25 or more one-way trips per month) representing 28 percent.
- *Most ferry system trips are non-commute trips* (70 percent of year-round trips). Commuters are an important part of WSF's ridership, but they are not the majority.
- *Riders have some flexibility in their schedules.* Sixty percent (60%) of respondents said they could take an earlier or later boat, including 8 percent of peak period drivers who said they could shift out of the peak period.
- *Riders are mostly satisfied with Washington State Ferries*, with 68 percent satisfied or very satisfied, 12 percent neutral, and 20 percent either dissatisfied or very dissatisfied.
- *Most riders believe that Washington State Ferries is a good value* (56 percent), with 30 percent neutral and 14 percent saying that ferries are a poor value.
- *Reductions in ferry use are driven more by changes in life circumstances than by fare increases.* Despite the fact that fares have risen by an average of 62 percent between 2000 and 2006, a relatively small percentage of people in the general customer survey cited price as the primary reason for reducing their ridership.
    - Of the riders surveyed who had not ridden a ferry in the last three months:
        - Fifty-three percent had not changed their ridership.
        - Four percent had increased their ridership.
        - Twelve percent had stopped riding completely. One hundred percent of these riders stated the primary reason they stopped riding is because they no longer do what they used to do and thus no longer need to ride. Seventeen percent of them cited fares as a secondary reason for stopping.
        - Thirty-one percent say they are riding less but have not stopped entirely. Of this 31 percent, 59 percent said the primary reason for their reduced ridership was that they no longer have a need to ride the ferry and 38 percent said the fares are too high.
- *Most Puget Sound residents use the ferry system.* Ninety-one percent of Puget Sound residents have used the ferry system. This includes 90 percent of East Sound residents, 98 percent of West Sound residents, and 100 percent of Island residents.
- *Most people think the ferry system is important.* Ninety-five percent of all Puget Sound residents responded that ferries are either very important (70 percent) or somewhat important (25 percent). More residents share that view in ferry-dependent communities (98 percent of West Sound residents, and 100 percent of Island residents) than in the East Sound non ferry-dependent communities (95 percent).

Revised ridership projection:

Phase I of the JTC study identified the lack of clarity caused by WSF's use of two different forecasting models, one for capital planning and one for short-term revenue forecasts, which had widely varying results.

Pursuant to ESHB 2358, WSF worked with a technical team, including a JTC representative, to develop a revised forecasting model. The new model cuts forecasted growth almost in half. Instead of the 68 percent growth projection used in WSF's 2006 plan, the improved forecast projects a 36 percent growth in overall system ridership between 2006 and 2030.

Step 2. Vehicle Level of Service Standard

The vehicle level of service standard set by WSF triggers requests to the Legislature for increased vessel and terminal capacity. Under the 2006 planning process, when the level of service falls below the standard, WSF requests funding for capacity increases to meet the standard. The system's vehicle capacity is the primary limitation on level of service, and hence the primary driver to increase vessel or terminal capacity.

The Legislature required WSF to review the basis for measuring vehicular level of service, which since 1994 has been based on a boat-wait measure (i.e., the number of boats a customer would miss due to capacity constraints before being able to board). WSF focused planning on the delivery of weekday peak period service (3PM to 7PM) when vehicles could not get on the first available ferry.

To more accurately reflect overall demand, WSF has revised its vehicle level of service standard to focus on the capacity of the system throughout the day and the year. The revised measurement is proposed to be the percentage of sailings throughout the day filled to capacity seasonally (spring, summer, and winter).

Why is this important?

Focusing on the delivery of service throughout the day, season and year will result in a more cost-efficient balance of peak and non-peak service and more cost-efficient capital investments.

Step 3. Operational and Pricing Strategies

In an effort to get the most out of existing capacity, ESHB 2358 directs WSF to adopt adaptive management practices in its operating and capital programs, a critical component of which is to review operational and pricing strategies that might level peak vehicle demand and shift ridership from vehicles to walk-on. The primary recommendation from this effort is to adopt a reservation system, though the legislation recognizes that strategies may vary between routes and travel sheds.

Why is this important?

1. Encouraging customers to walk on will use existing system capacity more fully.

2. WSF is asking its vehicle customers to interact with the system in a new way – by coming to the terminal near the time of departure instead of coming in advance (sometimes hours in advance) during peak periods to get on a sailing. The on-time arrival of vehicles to the terminal means that there will be less space required to hold vehicles at or near the terminal and less congestion on area roads.
3. A reservation system should increase the use of off-peak sailings. Customers will know in advance which sailing they can get on and can plan accordingly. This will allow WSF to expand service by increasing the service hours of existing vessels to times that, absent a reservation system, might not be filled.

Review of Operational and Pricing Strategies

WSF reviewed potential operational and pricing strategies including all those specifically identified in ESHB 2358. The review included presentations to, and input from, the JTC Ferry Policy Workgroup, Ferry Advisory Committees, members of the public at regular public meetings and through the WSF web site, and local officials. WSF relied on this input and the results of the customer survey to assess rider response to various operational and pricing strategies. Out of all the strategies reviewed, two types were selected:

- ***Strategies to Increase Walk-On Use of Ferries***
  - ***Transit enhancements.*** WSF proposes encouraging riders to walk on the ferry by increasing the connection between ferries and local transit. Three gaps in transit coverage dominated riders' decision to drive on rather than walk on the ferry: (1) availability of transit and/or parking at the terminal (30 percent); (2) the amount of time to take the total trip walking on compared to driving on (25 percent); and (3) the availability of transit to get from the ferry to their final destination (18 percent).
  - ***Fare incentives for foot passengers.*** WSF proposes to encourage walk-on ridership by growing fares over time at half the rate for passengers as for vehicle drivers. While the customer survey did not specifically address this proposal, it did find that increasing vehicle fares by 20 percent while maintaining walk-on fares could potentially increase walk-on ridership by 15 percent.

- ***Strategies to Level Peak Vehicle Demand and Encourage Use of Available Vehicle Capacity on Non-Peak Sailings***
  - ***Vehicle reservations.*** WSF proposes to implement a vehicle reservation system – expanding and updating the reservation system now used on the Sidney and Port Townsend routes and for freight on the Anacortes-San Juans route. The survey tested riders' opinion on reservation policies. Customer responses indicate that the reservation system should be dynamic and inform people how much capacity is reserved (70 percent of respondents); should penalize people that do not arrive on time (66 percent); and that frequent riders should be able to book a full week's travel at a time (56 percent).

- ***No charge for vehicle reservations.*** WSF proposes that no additional charge be imposed for making a reservation to discourage people from lining up for stand-by capacity to avoid the fee.

Step 4. Vessel Acquisition and Deployment

Vessel acquisition and deployment are driven by the level of ridership anticipated as modified by operating and pricing strategies. The Legislature directed the JTC to review vessel preservation costs and to make recommendations regarding the most efficient timing and sizing of future vessel acquisitions beyond those authorized by the 2007-09 biennium budget.

Why is this important?

1. Improving vessel preservation and replacing aging vessels is critical to WSF's ability to provide stable service.
2. Vessel acquisition represents a significant portion of WSF's capital plan. Less out of service time means acquiring fewer vessels, saving significant acquisition costs.
3. WSF's 2006 plan called for standardization of the fleet with all new vessels carrying 144 autos, which resulted in the need for major terminal renovations and replacements. The new plan calls for building boats within current terminal capacities.
4. Basing deployment decisions on the percentage of auto capacity used, percentage of sailings in which the auto capacity is sold out or fully reserved (proposed vehicle level of service), and the variable costs per auto carried will help reduce WSF's operating costs.

Changes in Vessel Acquisition, Preservation, and Deployment.

WSF has adopted a number of the JTC study recommendations to change fleet management strategies.

- ***Focus on Vessel Preservation.*** The 2007 emergency retirement of four Steel Electric class vessels due to hull steel deterioration highlighted the need to focus on vessel preservation. The retirement led to Coast Guard inspections and subsequent repairs to other vessels. The JTC consultant's report *Auto-Passenger Vessel Repair and Replacement Final Report* recommended that WSF develop and maintain a vessel rebuild and replacement plan as part of its capital plan, and implement an improved vessel maintenance and preservation program. The 2008 legislature adopted SSB 6932 directing WSF to implement those recommendations.
- ***Planning for Vessel Acquisition.*** The consultant's draft *Vessel Sizing and Timing Report* incorporated the revised ridership projections, and made the following draft recommendations:

- ***Fleet size.*** WSF should plan on a 21-vessel fleet to deliver the baseline 2030 service hours[2] with the existing deployment configuration. This is the same service hours and deployment planned in WSF's 2008 *Draft Long-Range Plan.*
- ***Reduce out of service time.*** In order to deliver the baseline service hours with a 21-vessel fleet, WSF should reduce average out of service time per vessel from seven weeks per year to six. Reducing out of service time would require revisions in WSF's approach to vessel preservation and maintenance.
- ***New vessel acquisitions.*** For the baseline service and deployment, WSF should plan to acquire 10 new vessels between 2006 and 2030, including four 64-auto Island Home vessels in the 2009-2012 time period and six new 144-auto vessels in the 2020-2030 time period.
- ***Open vessel acquisition to national competition.*** The legislature should consider revisions to the procurement statutes to allow national competition for the construction of new vessels for WSF. Current law requires that vessels be built in the State of Washington, which has resulted in WSF's receiving only one bid on each of two vessel construction bids let in 2008.

- ***Vessel Deployment Decisions.*** Deployment of vessels among routes is the most financially significant operational decision made by WSF. Nearly 60 percent of WSF's total operating costs are attributable to vessel operations. Of the vessel operating costs, approximately 50 percent are variable costs for deck labor and fuel that will change by where and for how long a vessel is deployed. The JTC's *Vessel Sizing and Timing Draft Report* included the following cost-saving deployment recommendations:
  - ***Deploy smaller vessels on some routes.*** The consultants recommended deploying smaller vessels on the Pt. Defiance, Interisland, Sidney, and Bremerton routes.
  - ***Deploy smaller vessels on the less utilized evening sailings.*** The consultants recommended deploying a smaller vessel from the Bremerton route to the evening Bainbridge sailings. The study also recommended using the smaller vessels assigned to the Kingston, Mukilteo and Triangle routes in the evenings.

  SSB 6932 passed in the 2008 legislative session requires WSF to include a vessel deployment plan in their capital plan.
- ***WSF's Draft Long-Range Plan Alternative A Incorporates Some Cost-Saving Recommendations.*** WSF's Draft Long-Range Plan Alternative A incorporates some of the JTC's cost-saving recommendations. WSF proposes:
  - A 22-vessel fleet for the delivery of the baseline service, with 10 new procurements (three Island Homes and seven 144s). By contrast, WSF's 2006 plan called for the acquisition of 14 new vessels.

[2] Baseline service hours are 114,728 hours across Ferries' nine auto-passenger routes.

- Later retirement of a renovated Super Class vessel (*Hyak*) than had previously been planned.

Step 5. Terminal and Repair Facility Plans

WSF terminal needs are determined by ridership, implementation of pricing and operational strategies, and the size of vessels planned for the routes. Budget provisos and ESHB 2358 directed WSF to: (1) review and update its terminal life cycle cost model (LCCM); and (2) to develop pre-design studies for terminal preservation projects over $5 million and for all terminal improvement projects before the legislature appropriates project design and construction funds.

Why is this important?

1. The revised terminal life cycle cost model provides a reliable basis for planning and legislative understanding of terminal preservation needs.
2. The reduction in terminal expansions and relocations represents a significant savings to WSF's capital program. Smaller terminals will also have lower future operating costs.
3. Pre-design studies allow OFM and the legislature to have more information about projects before committing to design and construction funding. The major terminal projects in WSF's *Draft Long-Range Plan* will be subject to the pre-design process, which will allow the legislature to have fuller information on the projects before appropriating design and construction funding. This will be particularly important for new initiatives, such as a reservation system, where the costs can be more fully vetted through the pre-design study process.

Changes in Terminal Plans Resulting from JTC Study.

Implementation of JTC terminal planning recommendations has resulted in significant savings in WSF's proposed terminal program.

- ***Need for major terminal expansions and multi-modal terminals reduced.*** The 2007-09 transportation budget placed WSF's major terminal projects on hold, pending the outcome of ESHB 2358 planning. Major terminal expansions placed on hold include Anacortes, Bainbridge, Port Townsend, and Seattle. Plans to relocate terminals at Keystone, Mukilteo, and Edmonds were also placed on hold. WSF's 2008 *Draft Long-Range Plan* reduces the scope of all of these projects and, in some cases, eliminates the project. The only terminal relocation included in the 2008 *Draft Long-Range Plan* is at Mukilteo. The Bainbridge, Anacortes, Port Townsend and Seattle projects have been reduced in scope.
- ***Terminal life cycle cost model update*** has been completed. The update of the LCCM included a review of the standard life cycles of structures, condition updates of all inventory elements, and the deletion of items that do not have a standard service life. The financial result of the review is a $106 million reduction in needed terminal preservation projects over the 2007-23 16-year financial plan.

- ***Pre-design studies*** have been completed and presented to the legislature for the Orcas Island and Vashon Island dolphin replacement projects. The JTC consultant reviewed the pre-design studies and concurred with the conclusion of each study.

Step 6. Financial Plan

WSF's financial plan is a product of improved planning and strategies, cost analysis and reduction, and projections of future funding. The improvements in the ridership forecast, operating and pricing strategies, and terminal and vessel plans driven by the JTC study lowered projections of costly future enhancements. In addition to the improvements in planning and strategies, the JTC conducted a series of detailed cost reviews with resulting cost reduction recommendations to ensure WSF is being run efficiently. Finally, the Legislature directed an examination of strategies to secure more stable funding for WSF. Those strategies included a public/private partnership study, and the WSTC study of ways in which future financing might be provided for WSF.

Why is this important?

1. Understanding ridership and operating costs will allow the legislature to set a reasonable target for needed fare revenue when adopting WSF's operations budget.
2. Focusing on WSF's capital staffing, administration, and indirect project costs will help ensure cost-effective delivery of WSF's capital program.
3. Distributing indirect and administrative costs to terminal and vessel capital projects will enable the legislature to understand the total cost of these projects.
4. Ensuring the right balance between capital and operating budget expenses based on cost-benefit analysis will enable WSF to be more strategic in its spending.
5. Reliable estimating of the magnitude of the gap in WSF's capital and operating funding will allow decision makers to determine the system's long-term direction.

Operating Budget Reviews. The JTC has reviewed WSF's operating costs in five studies that have looked at the full range of WSF's costs including labor, fuel, and other costs.[3] Key findings of the reviews are:

- ***Operating labor costs are difficult for WSF's management to contain.*** Labor accounts for 59 percent of all of WSF's operating costs. Labor costs for vessel operations, terminal operations, and maintenance are largely subject to labor agreements and Coast Guard requirements, which make it difficult for management to contain these costs. The *Draft Vessel Sizing and Timing Report* shows that utilizing smaller vessels on routes as appropriate can reduce labor costs.

[3] The five studies are: *(1) Washington State Ferries Financing Study Final Report, Technical Appendix 5: Operating Budget Review,* December 2006; (2) *Auto-Passenger Vessel Preservation and Replacement Final Report,* January 2008; (3) *Management and Support Costs Final Report,* July 2008; (4) *Non-Labor, Non-Fuel Operating Cost Final Report,* July 2008; and (5) *Vessel Sizing and Timing Draft Report,* November 2008.

- ***Fuel costs can be reduced.*** Fuel accounts for 21 percent of WSF's operating costs. While WSF cannot control the price it pays for fuel, there are ways in which fuel can be conserved to reduce operating costs. The JTC's *Vessel Sizing and Timing Draft Report* reviews fuel conservation efforts already underway at Ferries, and recommends that WSF reduce the speed of vessels and modify docking procedures to further reduce fuel consumption. Reducing speed and modifying docking procedures may require modifications to the existing schedule. Using smaller, more fuel efficient vessels as appropriate on routes will also reduce fuel costs.
- ***Operations management and support labor costs are reasonable.*** WSF's operating management and support positions account for 10 percent of Ferries' operations FTEs (full time equivalent positions) and 9 percent of Ferries' operations labor costs. This a reasonable level of administrative expense for the complexity of WSF's operation.
- ***Management and support operations non-labor expenses can be reduced.*** The JTC's reports on management and support made 19 recommendations for operating costs reviews, which WSDOT largely concurs with. The reviews are now underway, with the greatest potential savings from a review of WSF's marine insurance program.
- ***Fares reflect WSF's operating costs.*** ESHB 2358 provides new policies for setting ferry fares, including that fares should generate the amount of revenue required by WSF's legislatively adopted operations budget (ESHB 2358, Section 5). The legislation also states that WSF's operating costs need to be as low as possible. Ferries 2008 *Draft Long-Range Plan* proposes a fuel charge to help stabilize funding during periods of fuel price volatility.
- ***Higher ridership offsets costs.*** WSF has a high fixed cost of operation with little or no marginal cost from additional riders. The greater the ridership the less each rider must pay to cover WSF's projected operating cost.

Capital Costs Review. The JTC reviewed WSF's capital staffing and administrative expenses costs in two studies[4]. Key findings and results of the reviews are:

- ***Capital program staffing costs should be reviewed and reduced.***
  - ***Capital staffing should be based on the final Long-Range Plan.*** In the 2008 session the legislature directed WSF to maintain capital staffing levels at or below the level of staffing on January 1, 2008 (Section 309, (11)).
  - ***Capital program staff should focus on preservation.*** In the 2008 session, the legislature directed WSF to review its capital engineering divisions to ensure core competency in, and a focus on, terminal and vessel preservation, with staffing sufficient to implement the preservation program in the capital plan (Section 309, (11)).

[4] The two studies are: (1) *Capital Program Staffing and Administration Cost Final Report*, April 2008; and (2) *Systemwide Capital Projects Final Report*, July 2008.

- ***Capital staff charges to administration should be reviewed and reduced.*** The JTC's *Capital Program Staffing and Administration Final Report*, April 2008 found that 23 percent of WSF capital staff charges were to administrative overhead. The charges were not consistent with WSF's internal policy, with many more staff than authorized charging to administration.
- ***Use of on-site consultants should be reviewed and reduced.*** The JTC's *Capital Program Staffing and Administration Final Report*, April 2008, found that WSF spent $12.2 million or 7 percent of all capital expenses on on-site consultants in the 2005-07 biennium. Most of the expense for on-site consultants was in the Terminal Engineering division. Terminal Engineering has substantially reduced the costs for on-site consultants in the 2007-09 biennium.

- ***Capital program non-staffing administrative costs are generally reasonable.*** The JTC study found that non-staffing costs for community relations, legal affairs, accounting, and other administrative costs were generally reasonable. The exception was costs attributed to implementation of a capital program scheduling system. In the 2008 session the legislature directed WSF to review the costs and benefits of continued use of the primavera scheduling system in state ferries marine division and include that review with its 2009-2011 budget submittal.
- ***Allocation of indirect and administrative costs to capital projects.*** ESHB 2358 requires WSF to distribute indirect and administrative systemwide project costs to terminal and vessels projects. WSF has proposed and the JTC has reviewed and approved a method of allocating indirect and administrative costs to these projects.

Cost-benefit analysis: right balance between capital investments and operating costs. The JTC reports have recommended that WSF consistently undertake a cost-benefit analysis of its actions and consider the total implications for the capital and operations budget. For example, the JTC study found that WSF has done a good job of holding down capital preservation costs on its vessels by breaking up work so that some work is done during expensive drydock periods and other work is done later. While these actions reduce the per-vessel preservation and maintenance budget, they increase the amount of out of service time required for vessels, which leads to the need for additional vessels in the system.

Long-term financing. The WSTC has issued a preliminary *Long-Term Ferry Funding Study Preliminary Report,* November 2008. This report is based on WSF's September 2008 assessment of funding needed to provide baseline service. The *Long-Term Funding Study* will be updated in February 2009 to reflect WSF's December 2008 *Draft Long-Range Plan.* The JTC will review WSF's costs included in the 2008 *Draft Long-Range Plan* and report to the Transportation Committees by March 2009.

FERRY FINANCE DECISION MODEL: STATUS ESHB 2358 PLANNING

Overarching Legislative Goals

- o Accurate user and market information is vital.
- o Maximize the ferry system's current capacity.
- o Make most efficient use of existing assets and tax dollars.

WSF to adopt adaptive management practices in its operating and capital programs to keep costs as low as possible while continuously improving the quality of service.

Demand

WSTC to conduct a survey to provide information on customers & possible reactions to operational & pricing strategies.

Status

- Survey complete.
- Provides understanding of ferry customers.

Why important?

1. Corrects some assumptions about ferry customers & the causes of ridership declines.
2. Provides a basis for gauging potential reactions to operational & pricing strategies before implementing.
3. Provides a foundation for adaptive management practices.

WSF must recast and reconcile ridership demand forecasts.

Status

Revised forecasting method projects 36% ridership growth compared to 68% formerly (2006-30).

Why important?

1. Provides a more realistic basis for planning service & capital investments.
2. WSF can set a ridership goal that can be monitored. If WSF's ridership varies from the projections, surveys will provide a basis for management & legislative action.

Level of Service Standard (LOS)

WSF to re-establish vehicle LOS, evaluate if boat wait is the right measure.

Status

Revised vehicle LOS proposed is percentage of sailings filled to capacity seasonally (spring, summer, winter).

Why important?

Focusing on the delivery of service throughout the day and year will result in a more cost-efficient balance of peak & non-peak service, & more cost-efficient capital investments.

Operational and Pricing Strategies

WSF to develop strategies using data from survey, recognizing each travel shed is unique, consistent with vehicle LOS, use life cycle cost analysis to find best balance between capital and operating investments, and consider list of potential strategies.

Status

Propose strategies to:

a) Shift riders from vehicles to walk:

- Transit improvements
- Increase fares for foot passengers at half the rate of vehicle fares

b) Level peak demand:

- Vehicle reservations
- No reservation fee

Why important?

1. Encouraging customers to walk on will use existing system capacity more fully.
2. The on-time arrival of vehicles to the terminal means that there will be less space required to hold vehicles at or near the terminal and less congestion on roads.
3. A reservation system should increase the use of off peak sailings.

Vessel Acquisition & Deployment

JTC review vessel preservation costs & recommend the most efficient timing and sizing of future vessels.

Status

- SSB 6932 passed in 2008 session requires vessel replacement and deployment plan.
- *Vessel Sizing and Timing Draft Report* recommends baseline fleet size (21 vessel), vessel acquisitions (10 total, 4 64-auto & 6 144-auto), timing (4 smaller now, 7 144-auto 2020-2030) & allowing national competition for ship construction contracts.
- Basis for deployment decisions recommended.

Why important?

1. Improving vessel preservation & replacing aging vessels is critical to stable service.
2. Vessel acquisition represents a significant portion of WSF's capital costs. Less out of service time means acquiring fewer vessels, saving significant acquisition costs.
3. WSF's 2006 plan standardized the fleet, which led to major terminal capital expenses & under-used system auto capacity.
4. Basing deployment decisions on the percentage of auto capacity used, percentage of sailings in which the auto capacity is sold out or fully reserved (proposed vehicle LOS), and the variable costs per auto carried will help reduce WSF's operating costs.

Terminals/ Repair Facility Plans

Terminal Improvement Projects Placed on Hold

Status

All projects held either reduced in scope or eliminated.

WSF must revise life cycle cost model (LCCM).

Status

LCCM updated with $106 million deleted from 2007-12 16-year plan.

Pre-design study for preservation projects over > $5 M & improvements.

Status

Two pre-design studies complete.

Why important?

1. Revised terminal LCCM provides a reliable basis for planning & legislative understanding of terminal preservation needs.
2. Reduction in terminal expansions & relocations represents a significant savings to WSF's capital program and future operating costs.
3. Pre-design studies allow OFM and the legislature to have more information about projects before committing to design and construction funding. This process will be applied to new initiatives such as reservation system investments.

Operating Finance Plan

JTC to review: administrative operating costs and non-labor and non-fuel operating costs.

Status

JTC cost reviews show:

- Operating labor costs difficult for management to control.
- Fuel costs can be reduced.
- Management & support labor is reasonable, but non-labor costs can be reduced.
- Fares reflect WSF's operating cost & ridership level.

JTC studies recommend consistent use of cost-benefit analysis to weigh operating & capital costs.

Ferries recommending fuel surcharge to stabilize operations income.

Why important?

1. Understanding ridership and operating costs will allow the legislature to set a reasonable expectation for fare income when adopting WSF's operations budget.
2. Ensuring the right balance between capital & operating expenses will enable WSF to be more strategic in its spending.

Capital Finance Plan

Systemwide costs to be allocated to projects.

Status

Allocation methodology approved & used for 2009-11 biennium budget.

JTC to review admin. & systemwide capital costs.

Status

JTC cost reviews show:

- Capital staffing should be based on the final Long-Range Plan. (2008 budget proviso to hold staffing at 1-1-08 level)
- Capital staff should focus on preservation.
- Capital staff charges to administration should be reviewed & reduced.
- Use of on-site consultants should be reviewed & reduced.
- Capital program non-staffing costs are reasonable.

Long-Term Financing

- o *WSTC study*
- o *JTC review of capital plan*
- o *WSDOT review public/private partnerships*

Status

- WSDOT study complete
- JTC & WSTC underway

Why important?

1. Focusing on capital staffing, admin. & indirect projects costs will ensure cost-effective delivery of WSF's capital program.
2. Distributing indirect and admin. costs to terminal & vessel projects will enable the legislature to understand the total cost of these projects.
3. Reliable estimating of the magnitude of the gap in WSF's capital and operating funding will allow decision makers to determine the system's long-term direction.

MEMBERS
STATE FERRY SYSTEM REVIEW – PHASE II
POLICY WORKGROUP

Senators:

Mary Margaret Haugen
Harriett Spanel
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APPENDIX IV.
TERMINAL COST REVIEW

Anacortes Tie-Up Slip Preservation M03352

Budget Scenario A:	13,158,000	Recommended YOE $	8,977,081	Change	-4,180,919	-32%		
Ferries Estimate			Ferries Guideline		WSDOT Guideline		Recalculation	
(In 2008 $)			% Multipliers		% Multipliers		% Multipliers	
SUMMARY (Basis for Capital Cost Summary Table) w/Markups								
Construction		$ 5,380,316		$ 4,891,196		$ 4,891,196		$ 4,891,196
Mobilization	10.00%	included above	10.00%	$ 489,120	9.00%	$ 440,208	8.00%	$ 391,296
Construction (Including Mobilization)		$ 5,380,316		$ 5,380,316		$ 5,331,404		$ 5,282,492
Design Allowance	40.00%	$ 2,152,126	25.00%	$ 1,345,079	25.00%	$ 1,332,851	20.00%	$ 1,056,498
Subtotal		$ 7,532,442		$ 6,725,395		$ 6,664,255		$ 6,338,990
Sales Tax	8.00%	$ 602,595	9.00%	$ 605,286	9.00%	$ 599,783	9.00%	$ 570,509
Subtotal		$ 8,135,038		$ 7,330,681		$ 7,264,038		$ 6,909,500
Construction Engineering	11.00%	$ 894,854	11.00%	$ 806,375	8.00%	$ 581,123	8.00%	$ 507,119
Construction Contingency	5.00%	$ 406,752	4.00%	$ 293,227	4.00%	$ 290,562	4.00%	$ 253,560
Operations Construction Support		$ 7,500		$ -		$ -		$ -
Construction Total		$ 9,444,144		$ 8,430,283		$ 8,135,723		$ 7,670,178
Design Engineering	25.00%	$ 2,361,036	22.00%	$ 1,854,662	11.00%	$ 894,929	11.00%	$ 697,289
OPS Design Support		$ 14,500		$ 14,500		$ 14,500	(direct const only)	$ -
Design Total		$ 2,375,536		$ 1,869,162		$ 909,429		$ 697,289
Pre-Design Study (part of Design engineering above)		$ -		$ -		$ -		$ -
Other (ROW, etc)		$ -		$ -		$ -		$ 14,500
Below the Line Items			$ -		$ -		$ -	
Additional Operations Costs (during Construction)			$ -		$ -		$ -	
OPS Design Support							$ 14,500	
Escalation Factor	0.00%		0.00%		0.00%		0.00%	
Escalation to Const. Midpoint		$ -		$ -		$ -		$ -
Total		$ 11,819,680		$ 10,299,445		$ 9,045,152		$ 8,381,967
Total (rounded)		$ 11,820,000		$ 10,299,000		$ 9,045,000		$ 8,382,000
Cost Reduction				$ (1,521,000)		$ (2,775,000)		$ (3,438,000)
% Reduction				-12.87%		-23.48%		-33.38%

Bremerton Slip 2 Wingwall Replacement M03508A

Budget Scenario A	4,330,000	Recommended YOE$	2,880,450	Change	-1,449,550	-33%	
	Ferries Estimate (in 2008 $)		Ferries Guideline % Multipliers		WSDOT Guideline % Multipliers		Recalculation % Multipliers
SUMMARY (Basis for Capital Cost Summary Table) w/Markups							
Construction		$ 2,050,950		$ 1,864,500		$ 1,864,500	$ 1,518,500
Mobilization	10.00%	included above	9.00%	$ 167,805	9.00%	$ 167,805	8.00% $ 121,480
Construction (Including Mobilization)		$ 2,050,950		$ 2,032,305		$ 2,032,305	$ 1,639,980
Design Allowance	15.00%	$ 307,643	20.00%	$ 406,461	20.00%	$ 406,461	20.00% $ 327,996
Subtotal		$ 2,358,593		$ 2,438,766		$ 2,438,766	$ 1,967,976
Sales Tax	8.60%	$ 202,839	8.60%	$ 209,734	8.60%	$ 209,734	8.60% $ 169,246
Subtotal		$ 2,561,431	13.00%	$ 2,648,500		$ 2,648,500	$ 2,137,222
Construction Engineering	13.00%	$ 332,986	10.00%	$ 264,850	10.00%	$ 264,850	8.00% $ 157,438
Construction Contingency	5.00%	$ 128,072	4.00%	$ 105,940	4.00%	$ 105,940	4.00% $ 78,719
Operations Construction Support		$ 154,000		$ 154,000		$ 154,000	$ -
Construction Total		$ 3,176,489		$ 3,173,290		$ 3,173,290	$ 2,373,379
Design Engineering	26.00%	$ 825,887	26.00%	$ 825,055	12.00%	$ 380,795	12.00% $ 236,157
OPS Design Support		$ 12,000		$ 12,000		$ 12,000	(direct const only) $ -
Design Total		$ 837,887		$ 837,055		$ 392,795	$ 236,157
Pre-Design Study (part of Design engineering above)		$ -	$ -	$ -	$ -	$ -	$ - $ -
Other (ROW, etc)		$ -		$ -		$ -	$ 166,000
OPS Construction Support			$ -		$ -		$ 154,000
Additional Operations Costs (during Construction)			$ -		$ -		$ -
OPS Design Support							$ 12,000
Escalation Factor	0.00%		0.00%		0.00%		0.00%
Escalation to Const. Midpoint		$ -		$ -		$ -	$ -
Total		$ 4,014,376		$ 4,010,345		$ 3,566,085	$ 2,775,536
Total (rounded)	$ 4,014,000		$ 410,000		$ 3,566,000		$ 2,775,000
Cost Reduction			$ (3,604,000)		$ (448,000)		$ (1,239,000)
% Reduction			-89.79%		-11.16%		-30.87%

Adjustments Ferries Base Cost Estimate		
Ferries Estimate		
Delete duplication of piling purchase	1 ls	$ (346,000)
Adjusted Base estimate		$ (346,000)

Fauntleroy Terminal Replacement M03912A

Scenario A Budget	66,723,000		Recommended YOE$	46,489,802		Change	-20,233,198	-30%			
Ferries Estimate (In 2008 $) SUMMARY (Basis for Capital Cost Summary Table) w/Markups			Ferries Guideline % Multipliers			WSDOT Guideline % Multipliers			Recalculation % Multipliers		
Construction		$ 28,383,160			$ 25,802,873			$ 25,802,873			$ 21,975,673
Mobilization	10.00%	included above	10.00%		$ 2,580,287	8.50%		$ 2,193,244	8.00%		$ 1,758,054
Construction (Including Mobilization)		$ 28,383,160			$ 28,383,160			$ 27,996,117			$ 23,733,727
Design Allowance	24.00%	$ 6,811,958	24.00%		$ 6,811,958	24.00%		$ 6,719,068	20.00%		$ 4,746,745
Subtotal		$ 35,195,118			$ 35,195,118			$ 34,715,185			$ 28,480,472
Sales Tax	9.00%	$ 3,167,561	9.00%		$ 3,167,561	9.00%		$ 3,124,367	9.50%		$ 2,705,645
Subtotal		$ 38,362,679			$ 38,362,679			$ 37,839,552			$ 31,186,117
Construction Engineering	10.00%	$ 3,836,268	10.00%		$ 3,836,268	8.00%		$ 3,027,164	8.00%		$ 2,278,438
Construction Contingency	5.00%	$ 1,918,134	4.00%		$ 1,534,507	4.00%		$ 1,513,582	4.00%		$ 1,139,219
Operations Construction Support		$ -			$ -			$ -			$ -
Construction Total		$ 44,117,081			$ 43,733,454			$ 42,380,298			$ 34,603,773
Design Engineering	16.00%	$ 7,058,733	16.00%		$ 6,997,353	11.00%		$ 4,661,833	11.00%		$ 3,132,852
OPS Design Support		$ 50,500			$ 50,500			$ 50,500	(direct const only)		$ -
Design Total		$ 7,109,233			$ 7,047,853			$ 4,712,333			$ 3,132,852
Pre-Design Study (part of Design engineering above)		$ -			$ -			$ -			$ -
Other (ROW, etc)		$ 2,267,500			$ 2,267,500			$ 2,267,500			$ 2,318,000
Below the Line Items	$ 467,500		$ 467,500			$ 467,500			$ 467,500		
Additional Operations Costs (during Constructio	$ 1,800,000		$ 1,800,000			$ 1,800,000			$ 1,800,000		
OPS Design Support									$ 50,500		
Escalation Factor	0.00%		0.00%			0.00%			0.00%		
Escalation to Const. Midpoint		$ -			$ -			$ -			$ -
Total		$ 53,493,814			$ 53,048,807			$ 49,360,131			$ 40,054,625
Total (rounded)	$ 53,494,000		$ 53,049,000			$ 49,360,000			$ 40,055,000		
Cost Reduction			$ (445,000)			$ (4,134,000)			$ (13,439,000)		
% Reduction			-0.83%			-7.73%			-27.23%		

Adjustments Ferries Base Cost Estimate				
Ferries Estimate				
Trestle Area Construction	sf	(51,000)	$ 350.00	$ (17,850,000)
Building Trestle Area Construction	sf	(3,200)	$ 300.00	$ (960,000)
Building Electrical	sf	(3,045)	$ 160.00	$ (487,200)
Corrected to Inspection Report				
Trestle Area Construction	sf	41,000	$ 350.00	$ 14,350,000
Building Trestle Area Construction	sf	3,200	$ 350.00	$ 1,120,000
Building electrical is part of the Means cost/sf for building construction used for the base building estimate.				
Base Estimate reduction				$ (3,827,200)
Ferries Estimate				$ 25,802,873
Adjusted Base estimate				$ 21,975,673

Friday Harbor Timber Trestle Replacement M04012A

Scenario A Budget	15,041,000		Recommended YOE $	11,050,000	Change	-3,991,000	-27%	
Ferries Estimate (In 2008 $)			Ferries Guideline Percentage Multipliers		WSDOT Guideline Percentage Multipliers		Recalculation Percentage Multipliers	
SUMMARY (Basis for Capital Cost Summary Table) w/Markups								
Construction		$ 6,466,548		$ 5,878,680		$ 5,878,680		$ 5,878,680
Mobilization	10.00%	included above	10.00%	$ 587,868	9.50%	$ 558,475	8.00%	$ 470,294
Construction (Including Mobilization)		$ 6,466,548		$ 6,466,548		$ 6,437,155		$ 6,348,974
Design Allowance	30.00%	$ 1,939,964	30.00%	$ 1,939,964	30.00%	$ 1,931,146	30.00%	$ 1,904,692
Subtotal		$ 8,406,512		$ 8,406,512		$ 8,368,301		$ 8,253,667
Sales Tax	7.70%	$ 647,301	7.80%	$ 655,708	7.80%	$ 652,727	7.80%	$ 643,786
Subtotal		$ 9,053,814		$ 9,062,220		$ 9,021,028		$ 8,897,453
Construction Engineering	11.00%	$ 995,920	11.00%	$ 996,844	8.00%	$ 721,682	8.00%	$ 660,293
Per diem for on site staff		$ 86,000		$ 86,000		$ 86,000		$ 86,000
Construction Contingency	5.00%	$ 452,691	4.00%	$ 362,489	4.00%	$ 360,841	4.00%	$ 330,147
Operations Construction Support								
OPS Construction Support		$ 10,000		$ 10,000		$ 10,000		
Additional Operational Costs		$ 105,000		$ 105,000		$ 105,000		$ -
Public Outreach and Coordination		$ 25,000		$ 25,000		$ 25,000		$ -
Construction Total		$ 10,728,424		$ 10,507,553		$ 10,189,552		$ 9,973,893
Design Engineering	22.00%	$ 2,360,253	22.00%	$ 2,311,662	11.00%	$ 1,120,851	11.00%	$ 907,903
OPS Design Support		$ 8,000		$ 8,000		$ 8,000	(direct const only)	$ -
Design Total		$ 2,368,253		$ 2,319,662		$ 1,128,851		$ 907,903
Pre-Design Study (part of Design engineering above)	$ 115,000		$ 115,000		$ 115,000		$ 115,000	
Other (ROW, etc)		$ 20,000		$ 20,000		$ 20,000		$ 168,000
ROW	$ 20,000		$ 20,000		$ 20,000		$ 20,000	
Operations Construction Support	$ -		$ -		$ -		$ 10,000	
Additional Operations Costs (during Construction)	$ -		$ -		$ -		$ 105,000	
OPS Design Support	$ -		$ -		$ -		$ 8,000	
Public Outreach and Coordination	$ -		$ -		$ -		$ 25,000	
Escalation Factor	0.00%		0.00%		0.00%		0.00%	
Escalation to Const. Midpoint		$ -		$ -		$ -		$ -
Total		$ 13,116,677		$ 12,847,215		$ 11,338,403		$ 11,049,796
Total (rounded)	$ 13,117,000		$ 12,847,000		$ 11,338,000		$ 11,050,000	
Cost Reduction			$ (270,000)		$ (1,779,000)		$ (2,067,000)	
% Reduction			-2.06%		-13.56%		-16.09%	

Keystone Shore Power & Security Improvement

Scenario A Budget 265,000		Recommended YOE $ 250,880		Change -14,120	-5%		
Ferries Estimate (In 2008 $) SUMMARY (Basis for Capital Cost Summary Table) w/Markups			Ferries Guideline % Multipliers		WSDOT Guideline % Multipliers		Recalculation % Multipliers
Construction		$ 156,200		$ 131,027		$ 131,027		$ 131,027
Mobilization	10.00%	included above	10.00%	$ 13,103	8.00%	$ 10,482	6.00%	$ 7,862
Construction (Including Mobilization)		$ 156,200		$ 144,130		$ 141,509		$ 138,889
Design Allowance	15.00%	$ 23,430	15.00%	$ 21,619	15.00%	$ 21,226	15.00%	$ 20,833
Subtotal		$ 179,630		$ 165,749		$ 162,736		$ 159,722
Sales Tax	8.40%	$ 15,089	8.40%	$ 13,923	8.40%	$ 13,670	8.40%	$ 13,417
Subtotal		$ 194,719		$ 179,672		$ 176,405		$ 173,139
Construction Engineering	22.00%	$ 42,838	22.00%	$ 39,528	21.00%	$ 37,045	12.00%	$ 19,167
Construction Contingency	5.00%	$ 9,736	4.00%	$ 7,187	4.00%	$ 7,056	4.00%	$ 6,389
Operations Construction Support								
OPS Construction Support		$ -		$ 7,500		$ 7,500		$ -
Additional Operational Costs		$ -		$ -		$ -		$ -
Construction Total		$ 247,293		$ 233,887		$ 228,007		$ 198,694
Design Engineering	29.00%	$ 71,715	29.00%	$ 67,827	30.00%	$ 68,402	16.00%	$ 25,556
OPS Design Support		$ -		$ -		$ -	(direct const only)	
Design Total		$ 71,715		$ 67,827		$ 68,402		$ 25,556
Pre-Design Study (part of Design engineering above)			$ -		$ -		$ -	
Other (ROW, etc)		$ -		$ -		$ -		$ -
Operations Construction Support	$ -		$ -		$ -		$ -	
Additional Operations Costs (during Construction)			$ -		$ -		$ -	
OPS Design Support							$ -	
Escalation Factor	0.00%		0.00%		0.00%		0.00%	
Escalation to Const. Midpoint		$ -		$ -		$ -		$ -
Total		$ 319,008		$ 301,714		$ 296,409		$ 224,250
Total (rounded)	$ 319,000		$ 302,000		$ 296,000		$ 224,000	
Cost Reduction			$ (17,000)		$ (23,000)		$ (95,000)	
% Reduction			-5.33%		-7.21%		-31.46%	

Keystone Wingwall Preservation M04112

Scenario A Budget 4,759,000			Recommended YOE $ 2,705,000		Change -2,054,000	-44%		
Ferries Estimate (in 2008 $)			Ferries Guideline % Multipliers		WSDOT Guideline % Multipliers		Recalculation % Multipliers	
SUMMARY (Basis for Capital Cost Summary Table) w/Markups								
Construction		$ 2,357,355		$ 2,143,050		$ 2,143,050		$ 1,563,050
Mobilization	10.00%	included above	9.00%	$ 192,875	9.00%	$ 192,875	8.00%	$ 125,044
Construction (Including Mobilization)		$ 2,357,355		$ 2,335,925		$ 2,335,925		$ 1,688,094
Design Allowance	20.00%	$ 471,471	20.00%	$ 467,185	20.00%	$ 467,185	20.00%	$ 337,619
Subtotal		$ 2,828,826		$ 2,803,109		$ 2,803,109		$ 2,025,713
Sales Tax	8.40%	$ 237,621	8.40%	$ 235,461	8.40%	$ 235,461	8.40%	$ 170,160
Subtotal		$ 3,066,447	13.00%	$ 3,038,571		$ 3,038,571		$ 2,195,873
Construction Engineering	13.00%	$ 398,638	10.00%	$ 303,857	10.00%	$ 303,857	8.00%	$ 162,057
Construction Contingency	5.00%	$ 153,322	4.00%	$ 121,543	4.00%	$ 121,543	4.00%	$ 81,029
Operations Construction Support		$ 23,000		$ 23,000		$ 23,000		$ -
Construction Total		$ 3,641,408		$ 3,486,970		$ 3,486,970		$ 2,438,958
Design Engineering	26.00%	$ 946,766	26.00%	$ 906,612	12.00%	$ 418,436	12.00%	$ 243,086
OPS Design Support		$ -		$ -		$ -	(direct const only)	$ -
Design Total		$ 946,766		$ 906,612		$ 418,436		$ 243,086
Pre-Design Study (part of Design engineering above)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other (ROW, etc)		$ -		$ -		$ -		$ 23,000
OPS Construction Support	$ -		$ -		$ -		$ 23,000	
Additional Operations Costs (during Construction)	$ -		$ -		$ -		$ -	
OPS Design Support							$ -	
Escalation Factor	0.00%		0.00%		0.00%		0.00%	
Escalation to Const. Midpoint		$ -		$ -		$ -		$ -
Total		$ 4,588,174		$ 4,393,583		$ 3,905,407		$ 2,705,044
Total (rounded)	$ 4,588,000		$ 4,394,000		$ 3,905,000		$ 2,705,000	
Cost Reduction			$ (194,000)		$ (683,000)		$ (1,883,000)	
% Reduction			-4.23%		-14.89%		-42.85%	

Suggested Adjustments Ferries Base Cost Estimate Ferries Estimate			
Reduce demolition costs to reflect correct Inflation Factor application	1	ls	$ (100,000)
Delete duplication of piling purchase	1	ls	$ (480,000)
			$ -
Adjusted Base estimate			$ (580,000)

Lopez Wingwall MO4312A

Scenariro A Budget 9,010,000			Recommended YOE $ 6,999,589		Change -2,010,411		-22%	
Ferries Estimate (In 2008 $)			Ferries Guideline % Multipliers		% Multipliers		Recalculation % Multipliers	
SUMMARY (Basis for Capital Cost Summary Table) w/Markups								
Construction		$ 5,084,750		$ 4,622,500		$ 4,622,500		$ 3,929,125
Mobilization	10.00%	included above	9.50%	$ 439,138	9.00%	$ 416,025	9.00%	$ 353,621
Construction (Including Mobilization)		$ 5,084,750		$ 5,061,638		$ 5,038,525		$ 4,282,746
Design Allowance	15.00%	$ 762,713	20.00%	$ 1,012,328	20.00%	$ 1,007,705	20.00%	$ 856,549
Subtotal		$ 5,847,463		$ 6,073,965		$ 6,046,230		$ 5,139,296
Sales Tax	7.70%	$ 450,255	7.80%	$ 473,769	7.80%	$ 471,606	7.80%	$ 400,865
Subtotal		$ 6,297,717		$ 6,547,734		$ 6,517,836		$ 5,540,161
Construction Engineering	10.00%	$ 629,772	10.00%	$ 654,773	10.00%	$ 651,784	8.00%	$ 411,144
Construction Contingency	5.00%	$ 314,886	4.00%	$ 261,909	4.00%	$ 260,713	4.00%	$ 205,572
Operations Construction Support		$ 10,000		$ 10,000		$ 10,000		$ -
Construction Total		$ 7,252,375		$ 7,474,417		$ 7,440,333		$ 6,156,876
Design Engineering	16.00%	$ 1,160,380	16.00%	$ 1,195,907	12.00%	$ 892,840	12.00%	$ 616,715
OPS Design Support		$ 12,000		$ 12,000		$ 12,000	(direct const only)	
Design Total		$ 1,172,380		$ 1,207,907		$ 904,840		$ 616,715
Pre-Design Study (part of Design engineering above)	$ 55,000	$ -	$ 55,000	$ -	$ 55,000	$ -	$ 55,000	$ -
Other (ROW, etc)		$ -		$ -		$ -		$ 22,000
OPS Construction Support	$ -		$ -		$ -		$ 10,000	
Additional Operations Costs (during Construction)			$ -		$ -		$ -	
OPS Design Support							$ 12,000	
Escalation Factor	0.00%		0.00%		0.00%		0.00%	
Escalation to Const. Midpoint		$ -		$ -		$ -		$ -
Total		$ 8,424,755		$ 8,682,324		$ 8,345,173		$ 6,795,591
Total (rounded)	$ 8,425,000		$ 8,682,000		$ 8,345,000		$ 6,796,000	
Cost Reduction			$ 257,000		$ (80,000)		$ (1,629,000)	
% Reduction			3.05%		-0.95%		-18.76%	

Suggested Adjustments Ferries Base Cost Estimate			
Ferries Estimate			
Estimate 15% buried Contingency in base estimate due to inflating of estimated or historical costs	-15%	$	(693,375)
		$	-
Adjusted Base estimate		$	(693,375)

Mukilteo Terminal Relocation (No Bow Loading)

Scenario A Budget	138,030,000	Recommended YOE $	91,757,000	Change	-46,273,000		
	Ferries Estimate (in YOE $)		Ferries Guideline % Multipliers		WSDOT Guideline % Multipliers		Ferries Guideline % Multipliers	
SUMMARY (Basis for Capital Cost Summary Table) w/Markups								
Construction		$ 41,539,302		$ 41,539,302		$ 41,539,302		$ 41,548,902
Mobilization	9.00%	$ 3,738,537	9.00%	$ 3,738,537	8.50%	$ 3,530,841	9.00%	$ 3,739,401
Construction (Including Mobilization)		$ 45,277,839		$ 45,277,839		$ 45,070,143		$ 45,288,303
Design Allowance	30.00%	$ 13,583,352	30.00%	$ 13,583,352	30.00%	$ 13,521,043	30.00%	$ 13,586,491
Subtotal		$ 58,861,191		$ 58,861,191		$ 58,591,185		$ 58,874,794
Sales Tax	8.90%	$ 5,238,646	8.90%	$ 5,238,646	8.90%	$ 5,214,616	8.90%	$ 5,239,857
Subtotal		$ 64,099,837		$ 64,099,837		$ 63,805,801		$ 64,114,651
Construction Engineering	15.00%	$ 9,614,976	10.00%	$ 6,409,984	14.00%	$ 8,932,812	10.00%	$ 6,411,465
Construction Contingency	4.00%	$ 2,563,993	4.00%	$ 2,563,993	4.00%	$ 2,552,232	4.00%	$ 2,564,586
Other Construction (Below the Line Items)		$ 514,560		$ 514,560		$ 514,560		$ 514,560
Agreements (Utilities)	$ 38,802		$ 38,802		$ 38,802		$ 38,802	
State Force Work & Equipment	$ 168,750		$ 168,750		$ 168,750		$ 168,750	
Traffic Control (State Force)	$ 307,008		$ 307,008		$ 307,008		$ 307,008	
Operation shutdown Costs	$ -		$ -		$ -		$ -	
Construction Total		$ 76,793,366		$ 73,588,374		$ 75,805,405		$ 73,605,262
Design Engineering	25.00%	$ 19,198,341	16.00%	$ 11,774,140	11.00%	$ 8,338,595	16.00%	$ 11,776,842
Other Design - Tribal Mitigation		$ 7,500,000		$ 7,500,000		$ 7,500,000		$ 7,500,000
Design Total		$ 26,698,341		$ 19,274,140		$ 15,838,595		$ 19,276,842
Pre-Design Study (part of Design engineering above)		$ -		$ -		$ -		$ -
note: $988,800 shown in estimate summary, not in total								
Other (ROW, etc)		$ 2,737,000		$ 1,433,000		$ 1,433,000		$ 1,433,000
Property Purchase	$ 2,737,000		$ 1,433,000		$ 1,433,000		$ 1,433,000	
Tribal Mitigation	$ -		$ -		$ -		$ -	
Port of Everett Agreement			$ -		$ -		$ -	
Operation shutdown Costs	$ -		$ -		$ -		$ -	
Escalation Factor	0.00%		0.00%		0.00%		0.00%	
Escalation to Const. Midpoint		$ -		$ -		$ -		$ -
Total		$ 106,228,707		$ 94,295,514		$ 93,077,000		$ 94,315,104
Total (rounded)	$ 106,228,000		$ 94,296,000		$ 93,077,000		$ 92,957,000	
Cost Reduction			$ (11,932,000)		$ (13,151,000)		$ (13,271,000)	
% Reduction			-11.23%		-12.38%		-24.30%	

Suggested Adjustments Ferries Base Cost Estimate				
Ferries Estimate				
Building Base Construction Costs seem excessive				
Passenger Building	sf	1,600	$ (329.00)	$ (526,400)
Passenger Building Foundation	sf	1,600	$ (213.00)	$ (340,800)
Maintenance Building	sf	1,600	$ (220.00)	$ (352,000)
Suggested Reductions				
Passenger Building (sf cost as Fauntleroy				
Ferries estimate)	sf	1,600	$ 126.00	$ 201,600
Passenger Building Pile foundation	sf	1,600	$ 100.00	$ 160,000
Maintenance building	sf	1,600	$ 126.00	$ 201,600
Base Estimate reduction				$ 9,600
Ferries Estimate				$ 41,539,302
Adjusted Base estimate				$ 41,548,902

Orcas Dolphin Preservation M04512A

Scenario B Budget	1,411,000	Recommended YOE $	1,234,751	Change -176,249	-12%		
Ferries Estimate (In 2008 $) SUMMARY (Basis for Capital Cost Summary Table) w/Markups			Ferries Guideline % Multipliers		WSDOT Guideline % Multipliers		Recalculation % Multipliers	
Construction		$ 695,785		$ 632,532		$ 632,532		$ 632,532
Mobilization	10.00%	included above	10.00%	$ 63,253	9.00%	$ 56,928	8.00%	$ 50,603
Construction (Including Mobilization)		$ 695,785		$ 695,785		$ 689,460		$ 683,134
Design Allowance	15.00%	$ 104,368	20.00%	$ 139,157	20.00%	$ 137,892	20.00%	$ 136,627
Subtotal		$ 800,153		$ 834,942		$ 827,352		$ 819,761
Sales Tax	7.70%	$ 61,612	7.80%	$ 65,125	7.80%	$ 64,533	7.80%	$ 63,941
Subtotal		$ 861,765		$ 900,067		$ 891,885		$ 883,703
Construction Engineering	13.00%	$ 112,029	10.00%	$ 90,007	16.00%	$ 142,702	13.00%	$ 106,569
Construction Contingency	5.00%	$ 43,088	4.00%	$ 36,003	4.00%	$ 35,675	4.00%	$ 32,790
Operations Construction Support								
OPS Construction Support		$ 7,500		$ 5,000		$ 5,000		$ -
Additional Operational Costs		$ -		$ -		$ -		$ -
Construction Total		$ 1,024,382		$ 1,031,077		$ 1,075,262		$ 1,023,062
Design Engineering	26.00%	$ 266,339	29.00%	$ 299,012	13.00%	$ 139,784	13.00%	$ 106,569
OPS Design Support		$ 17,500		$ 12,000		$ 12,000	(direct const only)	$ -
Design Total		$ 283,839		$ 311,012		$ 151,784		$ 106,569
Pre-Design Study (part of Design engineering above)	$ -		$ -		$ -		$ -	
Other (ROW, etc)		$ -		$ -		$ -		$ 17,000
Operations Construction Support	$ -		$ -		$ -		$ 5,000	
Additional Operations Costs (during Construction)	$ -		$ -		$ -		$ -	
OPS Design Support							$ 12,000	
Escalation Factor	0.00%		0.00%		0.00%		0.00%	
Escalation to Const. Midpoint		$ -		$ -		$ -		$ -
Total		$ 1,308,221		$ 1,342,089		$ 1,227,046		$ 1,146,631
Total (rounded)	$ 1,309,000		$ 1,342,000		$ 1,227,000		$ 1,146,000	
Cost Reduction			$ 33,000		$ (82,000)		$ (163,000)	
% Reduction			2.52%		-6.26%		-12.15%	

Orcas Trestle Replacement M04511A

Scenario A Budget	4,886,000	Recommended YOE $	3,376,802	Change	-1,509,198	-31%	
Ferries Estimate (In 2008 $) SUMMARY (Basis for Capital Cost Summary Table) w/Markups			Ferries Guideline % Multipliers			Recalculation % Multipliers	
Construction		$ 1,839,398		$ 1,672,180			$ 1,672,180
Mobilization	10.00%	included above	10.00%	$ 167,218		9.00%	$ 150,496
Construction (Including Mobilization)		$ 1,839,398		$ 1,839,398			$ 1,822,676
Design Allowance	30.00%	$ 551,819	20.00%	$ 367,880		20.00%	$ 364,535
Subtotal		$ 2,391,217		$ 2,207,278			$ 2,187,211
Sales Tax	7.70%	$ 184,124	7.80%	$ 172,168		7.80%	$ 170,602
Subtotal		$ 2,575,341		$ 2,379,445			$ 2,357,814
Construction Engineering	23.00%	$ 592,328	23.00%	$ 547,272		14.00%	$ 306,210
Construction Contingency	5.00%	$ 128,767	4.00%	$ 95,178		4.00%	$ 87,488
Operations Construction Support							
OPS Construction Support		$ 7,500		$ 7,500			$ -
Additional Operational Costs		$ -		$ -			$ -
Construction Total		$ 3,303,937		$ 3,029,395			$ 2,751,512
Design Engineering	28.00%	$ 925,102	26.00%	$ 787,643		12.00%	$ 262,465
OPS Design Support		$ 17,500		$ 17,500		(direct const only)	$ -
Design Total		$ 942,602		$ 805,143			$ 262,465
Pre-Design Study (part of Design engineering above)			$ -			$ -	
Other (ROW, etc)		$ -		$ -			$ 25,000
Operations Construction Support	$ -		$ -			$ 7,500	
Additional Operations Costs (during Construction)	$ -		$ -			$ -	
OPS Design Support						$ 17,500	
Escalation Factor	0.00%		0.00%			0.00%	
Escalation to Const. Midpoint		$ -		$ -			$ -
Total		$ 4,246,539		$ 3,834,538			$ 3,038,977
Total (rounded)	$ 4,250,000		$ 3,835,000			$ 3,039,000	
Cost Reduction			$ (415,000)			$ (1,211,000)	
% Reduction			-9.76%			-31.58%	

Point Defiance Terminal Preservation M04611A

Scenario A	5,766,000	Recommended YOE $	4,094,000	Change	-1,672,000	-29%	
Ferries Estimate (In 2008 $)			Ferries Guideline % Multipliers		WSDOT Guideline % Multipliers		Recalculation % Multipliers	
SUMMARY (Basis for Capital Cost Summary Table) w/Markups								
Construction		$ 2,388,200		$ 2,171,091		$ 2,171,091		$ 2,108,899
Mobilization	10.00%	included above	10.00%	$ 217,109	9.50%	$ 206,254	9.00%	$ 189,801
Construction (Including Mobilization)		$ 2,388,200		$ 2,388,200		$ 2,377,345		$ 2,298,700
Design Allowance	30.00%	$ 716,460	20.00%	$ 477,640	20.00%	$ 475,469	20.00%	$ 459,740
Subtotal		$ 3,104,660		$ 2,865,840		$ 2,852,813		$ 2,758,440
Sales Tax	8.80%	$ 273,210	9.30%	$ 266,523	9.30%	$ 265,312	9.30%	$ 256,535
Subtotal		$ 3,377,870		$ 3,132,363		$ 3,118,125		$ 3,014,975
Construction Engineering	11.00%	$ 371,566	11.00%	$ 344,560	12.00%	$ 374,175	11.00%	$ 303,428
Construction Contingency	5.00%	$ 168,894	4.00%	$ 125,295	4.00%	$ 124,725	4.00%	$ 110,338
Operations Construction Support								
OPS Construction Support		$ 25,000		$ 25,000		$ 25,000		$ -
Additional Operational Costs		$ 300,000		$ 300,000		$ 300,000		$ -
Construction Total		$ 4,243,329		$ 3,927,218		$ 3,942,025		$ 3,428,741
Design Engineering	22.00%	$ 933,532	22.00%	$ 863,988	12.00%	$ 473,043	12.00%	$ 331,013
OPS Design Support		$ 9,500		$ 9,500		$ 9,500	(direct const only)	$ -
Design Total		$ 943,032		$ 873,488		$ 482,543		$ 331,013
Pre-Design Study (part of Design engineering above)	$ 60,000		$ 60,000		$ 60,000		$ 55,000	$ -
Other (ROW, etc)		$ -		$ -		$ -		$ 334,500
Operations Construction Support			$ -		$ -		$ 25,000	
Additional Operations Costs (during Construction)			$ -		$ -		$ 300,000	
OPS Design Support							$ 9,500	
Escalation Factor	0.00%		0.00%		0.00%		0.00%	
Escalation to Const. Midpoint		$ -		$ -		$ -		$ -
Total		$ 5,186,362		$ 4,800,705		$ 4,424,568		$ 4,094,253
Total (rounded)	$ 5,186,000		$ 4,801,000		$ 4,425,000		$ 4,094,000	
Cost Reduction			$ (385,000)		$ (761,000)		$ (1,092,000)	
% Reduction			-7.42%		-14.67%		-24.68%	

Suggested Adjustments Ferries Base Cost Estimate		
Ferries Estimate		
	-80%	
Reduct building electrical cost by 80%	$ 77,740	$ (62,192)
Adjusted Base estimate		$ (62,192)

Port Townsend Dolphin Preservation Slip 1 M04722A

Scenario A	4,241,000	Recommended YOE $	3,645,000	Change -596,000	-14%

	Ferries Estimate (In 2008 $)		Ferries Guideline % Multipliers		WSDOT Guideline % Multipliers		Recalculation % Multipliers	
SUMMARY (Basis for Capital Cost Summary Table) w/Markups								
Construction		$ 2,320,275		$ 2,109,341		$ 2,109,341		$ 2,109,341
Mobilization	10.00%	included above	10.00%	$ 210,934	9.00%	$ 189,841	8.00%	$ 168,747
Construction (Including Mobilization)		$ 2,320,275		$ 2,320,275		$ 2,299,182		$ 2,278,088
Design Allowance	15.00%	$ 348,041	20.00%	$ 464,055	20.00%	$ 459,836	20.00%	$ 455,618
Subtotal		$ 2,668,316		$ 2,784,330		$ 2,759,018		$ 2,733,706
Sales Tax	8.40%	$ 224,139	8.40%	$ 233,884	8.40%	$ 231,758	8.40%	$ 229,631
Subtotal		$ 2,892,455		$ 3,018,214		$ 2,990,775		$ 2,963,337
Construction Engineering	10.00%	$ 289,245	13.00%	$ 392,368	8.00%	$ 239,262	8.00%	$ 218,696
Construction Contingency	5.00%	$ 144,623	4.00%	$ 120,729	4.00%	$ 119,631	4.00%	$ 109,348
Operations Construction Support								
OPS Construction Support		$ 12,500		$ 12,500		$ 12,500		$ -
Additional Operational Costs		$ -		$ -		$ -		$ -
Construction Total		$ 3,338,823		$ 3,543,810		$ 3,362,168		$ 3,291,382
Design Engineering	16.00%	$ 534,212	26.00%	$ 921,391	12.00%	$ 403,460	12.00%	$ 328,045
OPS Design Support		$ 13,500		$ 13,500		$ 13,500	(direct const only)	
Design Total		$ 547,712		$ 934,891		$ 416,960		$ 328,045
Pre-Design Study (part of Design engineering above)			$ -		$ -		$ -	
Other (ROW, etc)		$ -		$ -		$ -		$ 26,000
Operations Construction Support	$ -		$ -		$ -		$ 12,500	
Additional Operations Costs (during Construction)			$ -		$ -		$ -	
OPS Design Support							$ 13,500	
Escalation Factor	0.00%		0.00%		0.00%		0.00%	
Escalation to Const. Midpoint		$ -		$ -		$ -		$ -
Total		$ 3,886,535		$ 4,478,701		$ 3,779,129		$ 3,645,427
Total (rounded)	$ 3,887,000		$ 4,479,000		$ 3,779,000		$ 3,645,000	
Cost Reduction			$ 592,000		$ (108,000)		$ (242,000)	
% Reduction			15.23%		-2.78%		-5.40%	

Port Townsend Dolphin Preservation Slip 2 M04735A

Scenario A Budget 3,718,000			Recommended YOE $ 3,155,040		Change -562,960		-14%	
Ferries Estimate (in 2008 $)			Ferries Guideline % Multipliers		WSDOT Guideline % Multipliers		Recalculation % Multipliers	
SUMMARY (Basis for Capital Cost Summary Table) w/Markups								
Construction		$ 1,789,458		$ 1,626,780		$ 1,626,780		$ 1,626,780
Mobilization	10.00%	included above	10.00%	$ 162,678	9.00%	$ 146,410	8.00%	$ 130,142
Construction (Including Mobilization)		$ 1,789,458		$ 1,789,458		$ 1,773,190		$ 1,756,922
Design Allowance	15.00%	$ 268,419	20.00%	$ 357,892	20.00%	$ 354,638	20.00%	$ 351,384
Subtotal		$ 2,057,877		$ 2,147,350		$ 2,127,828		$ 2,108,307
Sales Tax	8.40%	$ 172,862	8.40%	$ 180,377	8.40%	$ 178,738	8.40%	$ 177,098
Subtotal		$ 2,230,738		$ 2,327,727		$ 2,306,566		$ 2,285,405
Construction Engineering	10.00%	$ 223,074	13.00%	$ 302,605	8.00%	$ 184,525	8.00%	$ 168,665
Construction Contingency	5.00%	$ 111,537	4.00%	$ 93,109	4.00%	$ 92,263	4.00%	$ 84,332
Operations Construction Support								
OPS Construction Support		$ 12,500		$ 12,500		$ 12,500		$ -
Additional Operational Costs		$ -		$ -		$ -		$ -
Construction Total		$ 2,577,849		$ 2,735,941		$ 2,595,854		$ 2,538,401
Design Engineering	16.00%	$ 412,456	26.00%	$ 711,345	12.00%	$ 311,502	12.00%	$ 252,997
OPS Design Support		$ 13,500		$ 13,500		$ 13,500	(direct const only)	
Design Total		$ 425,956		$ 724,845		$ 325,002		$ 252,997
Pre-Design Study (part of Design engineering above)			$ -		$ -		$ -	
Other (ROW, etc)		$ -		$ -		$ -		$ 26,000
Operations Construction Support	$ -		$ -		$ -		$ 12,500	
Additional Operations Costs (during Construction)			$ -		$ -		$ -	
OPS Design Support							$ 13,500	
Escalation Factor	0.00%		0.00%		0.00%		0.00%	
Escalation to Const. Midpoint		$ -		$ -		$ -		$ -
Total		$ 3,003,805		$ 3,460,785		$ 2,920,856		$ 2,817,398
Total (rounded)	$ 3,004,000		$ 3,461,000		$ 2,921,000		$ 2,817,000	
Cost Reduction			$ 457,000		$ (83,000)		$ (187,000)	
% Reduction			15.21%		-2.76%		-5.40%	

Port Townsend Slip 1 Preservation M04731A

Scenario A Budget 11,753,000			Recommended YOE $ 8,686,699		Change -3,066,301		-26%	
Ferries Estimate (In 2008 $)			Ferries Guideline % Multipliers		WSDOT Guideline % Multipliers		Recalculation % Multipliers	
SUMMARY (Basis for Capital Cost Summary Table) w/Markups								
Construction		$ 5,849,690		$ 5,317,900		$ 5,317,900		$ 4,834,450
Mobilization	10.00%	included above	9.50%	$ 505,201	9.00%	$ 478,611	9.00%	$ 435,101
Construction (Including Mobilization)		$ 5,849,690		$ 5,823,101		$ 5,796,511		$ 5,269,551
Design Allowance	20.00%	$ 1,169,938	20.00%	$ 1,164,620	20.00%	$ 1,159,302	20.00%	$ 1,053,910
Subtotal		$ 7,019,628		$ 6,987,721		$ 6,955,813		$ 6,323,461
Sales Tax	8.60%	$ 603,688	8.60%	$ 600,944	8.60%	$ 598,200	9.00%	$ 569,111
Subtotal		$ 7,623,316		$ 7,588,665		$ 7,554,013		$ 6,892,572
Construction Engineering	13.00%	$ 991,031	13.00%	$ 986,526	10.00%	$ 755,401	8.00%	$ 505,877
Construction Contingency	5.00%	$ 381,166	4.00%	$ 303,547	4.00%	$ 302,161	4.00%	$ 252,938
Operations Construction Support		$ 7,500		$ 7,500		$ 7,500		$ -
Construction Total		$ 9,003,013		$ 8,886,238		$ 8,619,075		$ 7,651,387
Design Engineering	22.00%	$ 1,980,663	22.00%	$ 1,954,972	12.00%	$ 1,034,289	12.00%	$ 758,815
OPS Design Support		$ 25,000		$ 25,000		$ 25,000	(direct const only)	
Design Total		$ 2,005,663		$ 1,979,972		$ 1,059,289		$ 758,815
Pre-Design Study (in Design engineering)	$ 210,000	$ -	$ 210,000	$ -	$ 210,000	$ -	$ 119,000	$ -
Other (ROW, etc)		$ -		$ -		$ -		$ 37,500
OPS Construction Support	$ -		$ -		$ -		$ -	
Additional Operations Costs (during Construction)			$ -		$ -		$ -	
OPS Design Support							$ 37,500	
Escalation Factor	0.00%		0.00%		0.00%		0.00%	
Escalation to Const. Midpoint		$ -		$ -		$ -		$ -
Total		$ 11,008,676		$ 10,866,210		$ 9,678,364		$ 8,447,703
Total (rounded)	$ 11,009,000		$ 10,866,000		$ 9,678,000		$ 8,448,000	
Cost Reduction			$ (143,000)		$ (1,331,000)		$ (2,418,000)	
% Reduction			-1.30%		-12.09%		-22.25%	

Suggested Adjustments Ferries Base Cost Estimate			
Ferries Estimate			
Delete 1 Standard Vehicle Transfer Span			
Drilled shaft	-1 ea	$ 570,450	$ (570,450)
Add Potable Water Lines per Seattle	1 ea	$ 51,000	$ 51,000
Add Sewer Lines	1 ea	$ 36,000	$ 36,000
Adjusted Base estimate			$ (483,450)

Port Townsend Slip 2 Transfer Span Preservation M04732A

Scenario A Budget 14,396,000			Recommended YOE $ 10,760,335		Change -3,635,665		
Ferries Estimate (in 2008 $)			Ferries Guideline % Multipliers		WSDOT Guideline % Multipliers		Recalculation Methodology	
SUMMARY (Basis for Capital Cost Summary Table) w/Markups								
Construction		$ 6,399,875		$ 5,818,068		$ 5,818,068		$ 5,334,618
Mobilization	10.00%	included above	9.50%	$ 552,716	9.00%	$ 523,626	9.00%	$ 480,116
Construction (Including Mobilization)		$ 6,399,875		$ 6,370,785		$ 6,341,694		$ 5,814,734
Design Allowance	20.00%	$ 1,279,975	20.00%	$ 1,274,157	20.00%	$ 1,268,339	20.00%	$ 1,162,947
Subtotal		$ 7,679,850		$ 7,644,942		$ 7,610,033		$ 6,977,681
Sales Tax	8.60%	$ 660,467	8.60%	$ 657,465	8.60%	$ 654,463	9.00%	$ 627,991
Subtotal		$ 8,340,317		$ 8,302,407		$ 8,264,496		$ 7,605,672
Construction Engineering	13.00%	$ 1,084,241	13.00%	$ 1,079,313	10.00%	$ 826,450	8.00%	$ 558,214
Construction Contingency	5.00%	$ 417,016	4.00%	$ 332,096	4.00%	$ 330,580	4.00%	$ 279,107
Operations Construction Support		$ 7,500		$ 7,500		$ 7,500		$ -
Construction Total		$ 9,849,074		$ 9,721,316		$ 9,429,025		$ 8,442,994
Design Engineering	22.00%	$ 2,166,796	22.00%	$ 2,138,689	12.00%	$ 1,131,483	12.00%	$ 837,322
OPS Design Support		$ 25,000		$ 25,000		$ 25,000	(direct const only)	
Design Total		$ 2,191,796		$ 2,163,689		$ 1,156,483		$ 837,322
Pre-Design Study (in Design engineering)	$ 210,000	$ -	$ 210,000	$ -	$ 210,000	$ -	$ 119,000	$ -
Other (ROW, etc)		$ -		$ -		$ -		$ 32,500
OPS Construction Support			$ -		$ -		$ 7,500	
Additional Operations Costs (during Construction)			$ -		$ -		$ -	
OPS Design Support							$ 25,000	
Escalation Factor	0.00%		0.00%		0.00%		0.00%	
Escalation to Const. Midpoint		$ -		$ -		$ -		$ -
Total		$ 12,040,870		$ 11,885,005		$ 10,585,509		$ 9,312,815
Total (rounded)	$ 12,041,000		$ 11,885,000		$ 10,586,000		$ 9,313,000	
Cost Reduction			$ (156,000)		$ (1,455,000)		$ (2,728,000)	
% Reduction			-1.30%		-12.08%		-22.95%	

Suggested Adjustments Ferries Base Cost Estimate Ferries Estimate				
Delete 1 Standard Vehicle Transfer Span Drilled shaft	-1		$ 570,450	$ (570,450)
Add Potable Water Lines per Seattle	1		$ 51,000	$ 51,000
Add Sewer Lines		1	$ 36,000	$ 36,000
				$ -
Adjusted Base estimate				$ (483,450)

Seattle Slip 3 Transfer Span Preservation M04839A

Scenario A 13,939,000		Recommended YOE $ 11,048,093		Change -2,890,907	-21%		
Ferries Estimate (in 2008 $)		Ferries Guideline % Multipliers		WSDOT Guideline % Multipliers		Recalculation % Multipliers	
SUMMARY (Basis for Capital Cost Summary Table) w/Markups							
Construction	$ 6,887,540		$ 6,261,400		$ 6,261,400		$ 6,109,400
Mobilization 10.00%	included above	9.50%	$ 594,833	9.00%	$ 563,526	9.00%	$ 549,846
Construction (Including Mobilization)	$ 6,887,540		$ 6,856,233		$ 6,824,926		$ 6,659,246
Design Allowance 20.00%	$ 1,377,508	20.00%	$ 1,371,247	20.00%	$ 1,364,985	20.00%	$ 1,331,849
Subtotal	$ 8,265,048		$ 8,227,480		$ 8,189,911		$ 7,991,095
Sales Tax 9.00%	$ 743,854	9.50%	$ 781,611	9.50%	$ 778,042	9.50%	$ 759,154
Subtotal	$ 9,008,902		$ 9,009,090		$ 8,967,953		$ 8,750,249
Construction Engineering 13.00%	$ 1,171,157	13.00%	$ 1,171,182	10.00%	$ 896,795	8.00%	$ 639,288
Construction Contingency 5.00%	$ 450,445	4.00%	$ 360,364	4.00%	$ 358,718	4.00%	$ 319,644
Operations Construction Support	$ -		$ -		$ -		$ -
Construction Total	$ 10,630,505		$ 10,540,635		$ 10,223,466		$ 9,709,181
Design Engineering 22.00%	$ 2,338,711	22.00%	$ 2,318,940	12.00%	$ 1,226,816	12.00%	$ 958,931
OPS Design Support	$ 37,500		$ 37,500		$ 37,500	(direct const only)	
Design Total	$ 2,376,211		$ 2,356,440		$ 1,264,316		$ 958,931
Pre-Design Study (in Design engineering) $ 119,000	$ -	$ 119,000	$ -	$ 119,000	$ -	$ 119,000	$ -
Other (ROW, etc)	$ -		$ -		$ -		$ 37,500
Below the Line Items $ -		$ -		$ -		$ -	
Additional Operations Costs (during Construction)		$ -		$ -		$ -	
OPS Design Support						$ 37,500	
Escalation Factor 0.00%		0.00%		0.00%		0.00%	
Escalation to Const. Midpoint	$ -		$ -		$ -		$ -
Total	$ 13,006,716		$ 12,897,075		$ 11,487,782		$ 10,705,612
Total (rounded) $ 13,007,000		$ 12,897,000		$ 11,488,000		$ 10,706,000	
Cost Reduction		$ (110,000)		$ (1,519,000)		$ (2,301,000)	
% Reduction		-0.85%		-11.68%		-17.84%	

Suggested Adjustments Ferries Base Cost Estimate				
Ferries Estimate				
The Structural estimate utilizes the "Engineer's Estimate" which is appropriate, not the highest unit cost/item as has been in many Ferries estimates.				
The Mechanical system estimates however, appear to use the worst case scenario from the Backup (+10% est.)				
The Electrical system estimates however, appear to use the worst case scenario from the Backup (+ 10% est.)				
Estimate of buried "contingency"	ls	-2.43%	$ (152,000)	
			$ -	
Adjusted Base estimate			$ (152,000)	

Seattle Slip 2 Overhead Loading Preservation M04842A

Scenario A Budget 2,974,000			Recommended YOE $ 2,226,825		Change -747,175		-25%	
Ferries Estimate (in 2008 $)			Ferries Guideline % Multipliers		WSDOT Guideline % Multipliers		Recalculation % Multipliers	
SUMMARY (Basis for Capital Cost Summary Table) w/Markups								
Construction		$ 14,175,700		$ 12,887,000		$ 12,887,000		$ 11,468,475
Mobilization	10.00%	included above	9.50%	$ 1,224,265	9.50%	$ 1,224,265	8.00%	$ 917,478
Construction (Including Mobilization)		$ 14,175,700		$ 14,111,265		$ 14,111,265		$ 12,385,953
Design Allowance	20.00%	$ 2,835,140	20.00%	$ 2,822,253	20.00%	$ 2,822,253	20.00%	$ 2,477,191
Subtotal		$ 17,010,840		$ 16,933,518		$ 16,933,518		$ 14,863,144
Sales Tax	9.00%	$ 1,530,976	9.50%	$ 1,608,684	9.50%	$ 1,608,684	9.50%	$ 1,411,999
Subtotal		$ 18,541,816		$ 18,542,202		$ 18,542,202		$ 16,275,142
Construction Engineering	13.00%	$ 2,410,436	12.00%	$ 2,225,064	8.00%	$ 1,483,376	8.00%	$ 1,189,051
Construction Contingency	5.00%	$ 927,091	4.00%	$ 741,688	4.00%	$ 741,688	4.00%	$ 594,526
Operations Construction Support		$ 7,500		$ 7,500		$ -		$ -
Construction Total		$ 21,886,842		$ 21,516,455		$ 20,767,266		$ 18,058,719
Design Engineering	20.00%	$ 4,377,368	22.00%	$ 4,733,620	11.00%	$ 2,284,399	11.00%	$ 1,634,946
OPS Design Support		$ 37,500		$ 37,500		$ 14,500	(direct const only)	
Design Total		$ 4,414,868		$ 4,771,120		$ 2,298,899		$ 1,634,946
Pre-Design Study (part of Design engineering above)	$ 220,000	$ -	$ 220,000	$ -	$ 220,000	$ -	$ 220,000	$ -
Other (ROW, etc)		$ -		$ -		$ -		$ -
Below the Line Items	$ -		$ -		$ -		$ -	
Additional Operations Costs (during Construction)	$ -		$ -		$ -		$ -	
OPS Design Support							$ -	
Escalation Factor	0.00%		0.00%		0.00%		0.00%	
Escalation to Const. Midpoint		$ -		$ -		$ -		$ -
Total		$ 26,301,711		$ 26,287,575		$ 23,066,166		$ 19,693,665
Total (rounded)	$ 26,302,000		$ 26,288,000		$ 23,066,000		$ 19,694,000	
Cost Reduction			$ (14,000)		$ (3,236,000)		$ (6,608,000)	
% Reduction			-0.05%		-12.30%		-28.65%	

Suggested Adjustments Ferries Base Cost Estimate			
Ferries Estimate			
The estimate contains many "Contingencies" and uses the absolute highest number as they have developed the costs.			
Estimate of buried "contingency" of 7.5%	ls	-7.50%	$ (966,525)
Reduce the Drilled piling count between OHL 2 and 3 from 6 in the current two estimates, to 5 if both projects are done.			
Ferries Estimate			$ (452,000)
Adjusted Base estimate			$ (1,418,525)

Seattle Slip 3 Overhead Loading Preservation M04843A

Scenario A 28,579,000		Recommended YOE $	21,411,498		Change -7,167,502	-25%	
Ferries Estimate (in 2008 $) SUMMARY (Basis for Capital Cost Summary Table) w/Markups			Ferries Guideline % Multipliers		Recalculation % Multipliers		
Construction		$ 14,327,500		$ 13,025,000		$ 12,048,125	
Mobilization	10.00%	included above	9.50%	$ 1,237,375	8.00%	$ 963,850	
Construction (Including Mobilization)		$ 14,327,500		$ 14,262,375		$ 13,011,975	
Design Allowance	20.00%	$ 2,865,500	20.00%	$ 2,852,475	20.00%	$ 2,602,395	
Subtotal		$ 17,193,000		$ 17,114,850		$ 15,614,370	
Sales Tax	9.00%	$ 1,547,370	9.50%	$ 1,625,911	9.50%	$ 1,483,365	
Subtotal		$ 18,740,370		$ 18,740,761		$ 17,097,735	
Construction Engineering	13.00%	$ 2,436,248	12.00%	$ 2,248,891	8.00%	$ 1,249,150	
Construction Contingency	5.00%	$ 937,019	4.00%	$ 749,630	4.00%	$ 624,575	
Operations Construction Support		$ 7,500		$ 7,500		$ -	
Construction Total		$ 22,121,137		$ 21,746,782		$ 18,971,460	
Design Engineering	20.00%	$ 4,424,227	22.00%	$ 4,784,292	11.00%	$ 1,717,581	
OPS Design Support		$ 37,500		$ 37,500	(direct const only)		
Design Total		$ 4,461,727		$ 4,821,792		$ 1,717,581	
Pre-Design Study (part of Design engineering above)	$ 230,000	$ -	$ 230,000	$ -	$ 230,000	$ -	
Other (ROW, etc)		$ -		$ -		$ -	
Below the Line Items	$ -		$ -		$ -		
Additional Operations Costs (during Construction)			$ -		$ 7,500		
OPS Design Support					$ 37,500		
Escalation Factor	0.00%		0.00%		0.00%		
Escalation to Const. Midpoint		$ -		$ -		$ -	
Total		$ 26,582,864		$ 26,568,575		$ 20,689,040	
Total (rounded)	$ 26,583,000		$ 26,569,000		$ 20,689,000		
Cost Reduction			$ (14,000)		$ (5,894,000)		
% Reduction			-0.05%		-25.25%		

Suggested Adjustments Ferries Base Cost Estimate			
Ferries Estimate			
The estimate contains many "Contingencies" and uses the absolute highest number as they have developed the costs.			
Estimate of buried "contingency" of 7.5% minimum	Is	-7.50%	$ (976,875)
Reduce the Drilled piling count between OHL 2 and 3 from 6 in the current two estimates, to 5 if both projects are done.			
Reduction taken in Slip 2 OHL Preservation Recalc.			$ -
Adjusted Base estimate			$ (976,875)

Seattle Slip 2 Extension M04854A

Scenario B 4,998,000		Recommended YOE $		3,617,430		Change -1,380,570		-28%	
Ferries Estimate (in 2008 $)				Ferries Guideline % Multipliers		WSDOT Guideline % Multipliers		Recalculation % Multipliers	
SUMMARY (Basis for Capital Cost Summary Table) w/Markups									
Construction		$ 2,501,840			$ 2,274,400		$ 2,274,400		$ 1,984,400
Mobilization	10.00%	included above		9.50%	$ 216,068	8.00%	$ 181,952	8.00%	$ 158,752
Construction (Including Mobilization)		$ 2,501,840			$ 2,490,468		$ 2,456,352		$ 2,143,152
Design Allowance	20.00%	$ 500,368		20.00%	$ 498,094	20.00%	$ 491,270	20.00%	$ 428,630
Subtotal		$ 3,002,208			$ 2,988,562		$ 2,947,622		$ 2,571,782
Sales Tax	9.00%	$ 270,199		9.50%	$ 283,913	9.50%	$ 280,024	9.50%	$ 244,319
Subtotal		$ 3,272,407			$ 3,272,475		$ 3,227,647		$ 2,816,102
Construction Engineering	13.00%	$ 425,413		13.00%	$ 425,422	12.00%	$ 387,318	10.00%	$ 257,178
Construction Contingency	5.00%	$ 163,620		4.00%	$ 130,899	4.00%	$ 129,106	4.00%	$ 102,871
Operations Construction Support		$ -			$ -		$ -		$ -
Construction Total		$ 3,861,440			$ 3,828,796		$ 3,744,070		$ 3,176,151
Design Engineering	20.00%	$ 772,288		22.00%	$ 842,335	12.00%	$ 449,288	12.00%	$ 308,614
OPS Design Support		$ -			$ -		$ -	(direct const only)	
Design Total		$ 772,288			$ 842,335		$ 449,288		$ 308,614
Pre-Design Study (in Design engineering)	$ 119,000	$ -		$ 119,000	$ -	$ 119,000	$ -	$ 119,000	$ -
Other (ROW, etc)		$ -			$ -		$ -		$ -
Below the Line Items	$ -			$ -		$ -		$ -	
Additional Operations Costs (during Construction)				$ -		$ -		$ -	
OPS Design Support								$ -	
Escalation Factor	0.00%			0.00%		0.00%		0.00%	
Escalation to Const. Midpoint		$ -			$ -		$ -		$ -
Total		$ 4,633,728			$ 4,671,131		$ 4,193,358		$ 3,484,765
Total (rounded)	$ 4,640,000			$ 4,671,000		$ 4,193,000		$ 3,485,000	
Cost Reduction				$ 31,000		$ (447,000)		$ (1,155,000)	
% Reduction				0.67%		-9.63%		-24.73%	

Suggested Adjustments Ferries Base Cost Estimate Ferries Estimate	
The Bridge Seat Estimate ustilizes the more expensive Bridge Seat construction type, and adda 5% to the Engineer's Estimate. Using the same methodology to the less expensive construction type would reduce this by $90k +/-	$ (90,000)
The Mechanical Upgrade carries a 24% contingency in the base cost, prior to the 20% design allowance	$ (200,000)
The seismic Restraint and OHL mechanical system repairs seem reasonable from the backup	
Adjusted Base estimate	$ (290,000)

Seattle Terminal Building & Trestle M04841A/M04846A

Budget Scenario A	216,617,000	Recommended YOE $	140,082,000	Change	-76,535,000	-35%

Ferries Estimate (in YOE $)			Ferries Guidelines % Multipliers		WSDOT Guideline % Multipliers		Recalculation % Multipliers	
SUMMARY (Basis for Capital Cost Summary Table) w/Markups								
Construction		$ 94,758,400		$ 86,144,000		$ 86,144,000		$ 86,144,000
Mobilization	10.00%	included above	10.00%	$ 8,614,400	7.00%	$ 6,030,080	7.00%	$ 6,030,080
Construction (Including Mobilization)		$ 94,758,400		$ 94,758,400		$ 92,174,080		$ 92,174,080
Design Contingency	20.00%	$ 18,951,680	20.00%	$ 18,951,680	20.00%	$ 18,434,816	20.00%	$ 18,434,816
Subtotal		$ 113,710,080		$ 113,710,080		$ 110,608,896		$ 110,608,896
Sales Tax	9.00%	$ 10,233,907	9.50%	$ 10,802,458	9.50%	$ 10,507,845	9.50%	$ 10,507,845
Subtotal		$ 123,943,987		$ 124,512,538		$ 121,116,741		$ 121,116,741
Construction Engineering	10.00%	$ 12,394,399	10.00%	$ 12,451,254	8.00%	$ 9,689,339	8.00%	$ 8,848,712
Construction Contingency	5.00%	$ 6,197,199	4.00%	$ 4,980,502	4.00%	$ 4,844,670	4.00%	$ 4,424,356
Operations Construction Support		$ 25,000		$ -		$ -		$ -
Construction Total		$ 142,560,585		$ 141,944,293		$ 135,650,750		$ 134,389,809
Design Engineering	10.00%	$ 14,256,059	16.00%	$ 22,711,087	11.00%	$ 14,921,583	11.00%	$ 12,166,979
OPS Design Support		$ 49,500		$ 49,500		$ 49,500	(direct const only)	
Design Total		$ 14,305,559		$ 22,760,587		$ 14,971,083		$ 12,166,979
Pre-Design Study (part of Design engineering above)		$ -		$ -		$ -		$ -
note: $715,000 shown in estimate summary, not in total								
Other (ROW, etc)		$ -		$ -		$ -		$ 74,500
Below the Line Items	$ -		$ -		$ -		$ -		
Additional Operations Costs (during Construction)	$ -		$ -		$ -		$ -		
OPS Construction Support	$ -		$ -		$ -		$ 25,000		
OPS Design Support	$ -		$ -		$ -		$ 49,500		
Escalation Factor	0.00%		0.00%		0.00%		0.00%		
Escalation to Const. Midpoint		$ -		$ -		$ -		$ -
Total		$ 156,866,144		$ 164,704,880		$ 150,621,833		$ 146,631,287
Total (rounded)	$ 156,870,000		$ 164,705,000		$ 150,622,000		$ 146,631,000	
Cost Reduction			$ 7,835,000		$ (6,248,000)		$ (10,239,000)	
% Reduction			4.99%		-3.98%		-6.80%	

Suggested Adjustments Ferries Base Cost Estimate					
Ferries Estimate					
Throughout the estimate, from the detailed backup to the summary sheet, there is a adder buried of up to 10%, with much being around 5%					
Estimate of buried "contingency" of 5%	ls		-5.00%	$	(4,307,200)
Terminal Building is $375/sf, before 10% adder. Basis picked in RS Means not necessarily appropriate.					
Very High end Building Construction should not exceed $250/sf					
Building Area	sf	25,000	$ (125.00)	$	(3,125,000)
Base Estimate reduction				$	-
Ferries Estimate				$	86,144,000
Adjusted Base estimate				$	86,144,000

Shaw Dolphin Preservation M04904A

Scenario A Budget 3,985,000	Recommended YOE $	3,241,000	Change -744,000	-19%					
Ferries Estimate (In 2008 $) SUMMARY (Basis for Capital Cost Summary Table) w/Markups			Ferries Guideline % Multipliers		WSDOT Guideline % Multipliers		Recalculation % Multipliers	
Construction		$ 2,076,250		$ 1,887,500		$ 1,887,500		$ 1,887,500
Mobilization	10.00%	included above	10.00%	$ 188,750	9.00%	$ 169,875	8.00%	$ 151,000
Construction (Including Mobilization)		$ 2,076,250		$ 2,076,250		$ 2,057,375		$ 2,038,500
Design Allowance	15.00%	$ 311,438	20.00%	$ 415,250	20.00%	$ 411,475	20.00%	$ 407,700
Subtotal		$ 2,387,688		$ 2,491,500		$ 2,468,850		$ 2,446,200
Sales Tax	7.70%	$ 183,852	7.80%	$ 194,337	7.80%	$ 192,570	7.80%	$ 190,804
Subtotal		$ 2,571,539		$ 2,685,837		$ 2,661,420		$ 2,637,004
Construction Engineering	13.00%	$ 334,300	13.00%	$ 349,159	8.00%	$ 212,914	8.00%	$ 195,696
Construction Contingency	5.00%	$ 128,577	4.00%	$ 107,433	4.00%	$ 106,457	4.00%	$ 97,848
Operations Construction Support								
OPS Construction Support		$ 5,000		$ 5,000		$ 5,000		$ -
Additional Operational Costs		$ -		$ -		$ -		$ -
Construction Total		$ 3,039,417		$ 3,147,429		$ 2,985,791		$ 2,930,548
Design Engineering	26.00%	$ 790,248	26.00%	$ 818,332	12.00%	$ 358,295	12.00%	$ 293,544
OPS Design Support		$ 12,000		$ 12,000		$ 12,000	(direct const only)	
Design Total		$ 802,248		$ 830,332		$ 370,295		$ 293,544
Pre-Design Study (part of Design engineering above)	$ -		$ -		$ -		$ -	
Other (ROW, etc)		$ -		$ -		$ -		$ 17,000
Operations Construction Support	$ -		$ -		$ -		$ 5,000	
Additional Operations Costs (during Construction)	$ -		$ -		$ -		$ -	
OPS Design Support							$ 12,000	
Escalation Factor	0.00%		0.00%		0.00%		0.00%	
Escalation to Const. Midpoint		$ -		$ -		$ -		$ -
Total		$ 3,841,665		$ 3,977,761		$ 3,356,086		$ 3,241,092
Total (rounded)	$ 3,842,000		$ 3,978,000		$ 3,356,000		$ 3,241,000	
Cost Reduction			$ 136,000		$ (486,000)		$ (601,000)	
% Reduction			3.54%		-12.65%		-15.11%	

Southworth Trestle Preservation M05104A

Scenario A Budget 10,852,000		Recommended YOE $	20,057,176	Change 9,205,176	85%
Ferries Estimate (in 2008 $) SUMMARY (Basis for Capital Cost Summary Table) w/Markups			Ferries Guideline % Multipliers	WSDOT Guideline % Multipliers	Recalculation % Multipliers
Construction		$ 11,109,360	$ 10,099,418	$ 10,099,418	$ 10,099,418
Mobilization	10.00%	included above	10.00% $ 1,009,942	9.50% $ 959,445	8.00% $ 807,953
Construction (Including Mobilization)		$ 11,109,360	$ 11,109,360	$ 11,058,863	$ 10,907,372
Design Allowance	30.00%	$ 3,332,808	20.00% $ 2,221,872	20.00% $ 2,211,773	20.00% $ 2,181,474
Subtotal		$ 14,442,168	$ 13,331,232	$ 13,270,635	$ 13,088,846
Sales Tax	8.60%	$ 1,242,026	8.60% $ 1,146,486	8.60% $ 1,141,275	8.60% $ 1,125,641
Subtotal		$ 15,684,194	$ 14,477,718	$ 14,411,910	$ 14,214,487
Construction Engineering	11.00%	$ 1,725,261	11.00% $ 1,592,549	8.00% $ 1,152,953	8.00% $ 1,047,108
Construction Contingency	5.00%	$ 784,210	4.00% $ 579,109	4.00% $ 576,476	4.00% $ 523,554
Operations Construction Support					
OPS Construction Support		$ 20,000	$ 20,000	$ 20,000	
Additional Operational Costs		$ 180,000	$ 180,000	$ 180,000	$ -
Art (0.5% of terminal Bldg Costs)		$ 4,733	$ 4,733	$ 4,733	$ 4,733
Construction Total		$ 18,398,399	$ 16,649,376	$ 16,141,339	$ 15,785,148
Design Engineering	22.00%	$ 4,047,648	22.00% $ 3,662,863	11.00% $ 1,775,547	11.00% $ 1,439,773
OPS Design Support		$ 27,500	$ 27,500	$ 27,500	(direct const only) $ -
Design Total		$ 4,075,148	$ 3,690,363	$ 1,803,047	$ 1,439,773
Pre-Design Study (in Design engineering)	$ 250,000		$ 250,000	$ 250,000	$ 250,000
Other (ROW, etc)		$ -	$ -	$ -	$ 250,500
Operations Construction Support	$ -		$ -	$ -	$ 20,000
Additional Operations Costs (during Construction)			$ -	$ -	$ 180,000
OPS Design Support					$ 50,500
Escalation Factor	0.00%		0.00%	0.00%	0.00%
Escalation to Const. Midpoint		$ -	$ -	$ -	$ -
Total		$ 22,473,546	$ 20,339,738	$ 17,944,387	$ 17,475,421
Total (rounded)	$ 22,474,000		$ 20,340,000	$ 17,944,000	$ 17,475,000
Cost Reduction			$ (2,134,000)	$ (4,530,000)	$ (4,999,000)
% Reduction			-9.50%	-20.16%	-24.58%

Tahlequah Trestle Replacement M05104A

Scenario A Budget 8,459,000	Recommended YOE $ 5,407,000	Change -3,052,000 -36%		
Ferries Estimate (in 2008 $) SUMMARY (Basis for Capital Cost Summary Table) w/Markups		Ferries Guideline % Multipliers	WSDOT Guideline % Multipliers	Recalculation % Multipliers
Construction	$ 3,217,361	$ 2,924,874	$ 2,924,874	$ 2,924,874
Mobilization	10.00% included above	10.00% $ 292,487	9.50% $ 277,863	9.00% $ 263,239
Construction (Including Mobilization)	$ 3,217,361	$ 3,217,361	$ 3,202,737	$ 3,188,112
Design Allowance	30.00% $ 965,208	20.00% $ 643,472	20.00% $ 640,547	20.00% $ 637,622
Subtotal	$ 4,182,569	$ 3,860,833	$ 3,843,284	$ 3,825,735
Sales Tax	8.60% $ 359,701	8.60% $ 332,032	8.60% $ 330,522	8.60% $ 329,013
Subtotal	$ 4,542,270	$ 4,192,865	$ 4,173,806	$ 4,154,748
Construction Engineering	11.00% $ 499,650	11.00% $ 461,215	8.00% $ 333,905	8.00% $ 306,059
Construction Contingency	5.00% $ 227,114	4.00% $ 167,715	4.00% $ 166,952	4.00% $ 153,029
Operations Construction Support				
OPS Construction Support	$ 25,000	$ 25,000	$ 25,000	$ -
Additional Operational Costs	$ 300,000	$ 300,000	$ 300,000	$ -
Construction Total	$ 5,594,034	$ 5,146,795	$ 4,999,663	$ 4,613,836
Design Engineering	22.00% $ 1,230,687	22.00% $ 1,132,295	12.00% $ 599,960	12.00% $ 459,088
OPS Design Support	$ 9,500	$ 9,500	$ 9,500	(direct const only)
Design Total	$ 1,240,187	$ 1,141,795	$ 609,460	$ 459,088
Pre-Design Study (part of Design engineering above)	$ 60,000	$ 60,000	$ 60,000	$ 60,000
Other (ROW, etc)	$ -	$ -	$ -	$ 334,500
Operations Construction Support	$ -	$ -	$ -	$ 25,000
Additional Operations Costs (during Construction)	$ -	$ -	$ -	$ 300,000
OPS Design Support				$ 9,500
Escalation Factor	0.00%	0.00%	0.00%	0.00%
Escalation to Const. Midpoint	$ -	$ -	$ -	$ -
Total	$ 6,834,221	$ 6,288,589	$ 5,609,123	$ 5,407,424
Total (rounded)	$ 6,834,000	$ 6,289,000	$ 5,609,000	$ 5,407,000
Cost Reduction		$ (545,000)	$ (1,225,000)	$ (1,427,000)
% Reduction		-7.97%	-17.93%	-22.69%

Vashon Trestle Preservation M05204A

Scenario A Budget 52,526,000	Recommended YOE $ 41,022,422	Change -11,503,578 -22%	
Ferries Estimate (in 2008 $) SUMMARY (Basis for Capital Cost Summary Table) w/Markups	Ferries Guideline % Multipliers	WSDOT Guideline % Multipliers	Recalculation % Multipliers
Construction $ 26,620,237	$ 24,200,215	$ 24,200,215	$ 22,023,322
Mobilization 10.00% included above	10.00% $ 2,420,022	8.50% $ 2,057,018	8.00% $ 1,761,866
Construction (Including Mobilization) $ 26,620,237	$ 26,620,237	$ 26,257,234	$ 23,785,187
Design Allowance 20.00% $ 5,324,047	20.00% $ 5,324,047	20.00% $ 5,251,447	20.00% $ 4,757,037
Subtotal $ 31,944,284	$ 31,944,284	$ 31,508,681	$ 28,542,225
Sales Tax 8.60% $ 2,747,208	8.60% $ 2,747,208	8.60% $ 2,709,747	8.60% $ 2,454,631
Subtotal $ 34,691,493	$ 34,691,493	$ 34,218,427	$ 30,996,856
Construction Engineering 11.00% $ 3,816,064	11.00% $ 3,816,064	8.00% $ 2,737,474	8.00% $ 2,283,378
Construction Contingency 5.00% $ 1,734,575	4.00% $ 1,387,660	4.00% $ 1,368,737	4.00% $ 1,141,689
Operations Construction Support			
OPS Construction Support $ 20,000	$ 20,000	$ 20,000	
Temp Buildings $ 252,000	$ 252,000	$ 252,000	$ 252,000
Art (0.5% of terminal Bldg Costs) $ 16,086	$ 16,086	$ 16,086	$ 34,353
Construction Total $ 40,530,218	$ 39,895,217	$ 38,324,638	$ 34,421,923
Design Engineering 15.00% $ 6,079,533	16.00% $ 6,383,235	11.00% $ 4,215,710	11.00% $ 3,139,645
OPS Design Support $ 27,500	$ 27,500	$ 27,500	(direct const only)
Design Total $ 6,107,033	$ 6,410,735	$ 4,243,210	$ 3,139,645
Pre-Design Study (in Design eng.) $ 250,000	$ 250,000	$ 250,000	$ 250,000
Other (ROW, etc) $ -	$ -	$ -	$ 47,500
Operations Construction Support $ -	$ -	$ -	$ 20,000
Additional Operations Costs (during Construction)	$ -	$ -	$ -
OPS Design Support			$ 27,500
Escalation Factor 0.00%	0.00%	0.00%	0.00%
Escalation to Const. Midpoint $ -	$ -	$ -	$ -
Total $ 46,637,250	$ 46,305,951	$ 42,567,849	$ 37,609,068
Total (rounded) $ 46,637,000	$ 46,306,000	$ 42,568,000	$ 37,609,000
Cost Reduction	$ (331,000)	$ (4,069,000)	$ (9,028,000)
% Reduction	-0.71%	-8.72%	-21.21%

Suggested Adjustments Ferries Base Cost Estimate				
Ferries Estimate				
Trestle Area Demolition	sf	(51,000)	$ 50.00	$ (2,550,000)
Building Trestle Area Demolition	sf	(4,838)	$ 50.00	$ (241,900)
Disposal of Creosote Timber	ton	(3,106)	$ 250.00	$ (776,500)
Trestle Area Construction	sf	(51,000)	$ 315.00	$ (16,065,000)
Building Trestle Area Construction	sf	(3,200)	$ 315.00	$ (1,008,000)
Terminal Building Construction	sf	(2,664)	$ 59.00	$ (157,176)
Per LCCM and Inspection Reports				
Trestle Area Demolition	sf	43,320	$ 50.00	$ 2,166,000
Building Trestle Area Demolition	sf	4,940	$ 50.00	$ 247,000
Disposal of Creosote Timber	ton	2,684	$ 250.00	$ 671,118
Trestle Area Construction	sf	43,320	$ 315.00	$ 13,645,800
Sidewalk and support	sf	4,940	$ 315.00	$ 1,556,100
Terminal Building Construction	sf	2,664	$ 126.00	$ 335,664
Base Estimate reduction				$ (2,176,894)
Ferries Estimate				$ 24,200,215
Adjusted Base estimate				$ 22,023,322

Security Improvement Projects

Terminal	WSF Scoping Document (2008 $)	Scenario A (YOE $)	Recommended (YOE $)*
Anacortes	131,557	137,000	484,000
Bainbridge	131,557	137,000	44,000
Bremerton	131,557	137,000	43,000
Clinton	122,076	127,000	43,000
Edmonds	122,076	127,000	43,000
Fauntleroy	122,076	127,000	42,000
Friday Harbor	533,340	553,000	438,000
Keystone	487,117	505,000	427,000
Kingston	122,076	127,000	42,000
Lopez	48,593	51,000	25,000
Mukilteo	122,076	127,000	42,000
Orcas	48,593	51,000	26,000
Point Defiance	418,376	434,000	360,000
Port Townsend	555,859	576,000	31,000
Seattle	135,113	140,000	59,000
Shaw	48,593	51,000	25,000
Southworth	122,076	127,000	42,000
Tahlequah	137,483	142,000	175,000
Vashon	122,076	127,000	32,000
Total	3,662,268	3,803,000	2,423,000

* Based on Ferries' revisions.