

WSDOT FERRIES DIVISION
&
WASHINGTON STATE TRANSPORTATION
COMMISSION

FUEL COST MITIGATION PLAN

**A Joint Report on Ferry Fuel Cost Saving Strategies
and a Fuel Surcharge Business Plan**

Prepared for:

The Senate & House Transportation Committees

and

Office of Financial Management

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FUEL COST MITIGATION PLAN

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EXECUTIVE SUMMARY

The Washington State Ferries (WSF) Long-Range Plan, adopted in June 2009, included a number of initiatives designed to manage demand and financial risks for a system that is facing significant funding shortfalls over the next 20 years. One recommendation was to develop and implement a fuel surcharge program to mitigate the financial risk of future fuel price fluctuations. The Washington State Transportation Commission (WSTC) incorporated this recommendation into its Long Term Funding Study final recommendations. Both studies were available to the Legislature as members deliberated over the FY 2009-11 Budget and considered funding and policy issues in the 16-Year Legislative Financial Plan for Transportation.

This Fuel Cost Mitigation Plan was developed in response to two provisos contained in the FY 2009-11 adopted budget for WSF and the Transportation Commission regarding initiation of a fuel surcharge:

For the Department of Transportation – Marine: If, after the department's review of fares and pricing policies, the department proposes a fuel surcharge, the department must evaluate other cost savings and fuel price stabilization strategies that would be implemented before the imposition of a fuel surcharge.

For the Transportation Commission – Fuel surcharge methodology: If the commission considers implementing a ferry fuel surcharge, it must first submit an analysis and business plan to the office of financial management and either the joint transportation committee or the transportation committees of the legislature.

The goal of this plan is to combine both elements of the provisos into a document that both describes WSF's fuel cost mitigation plans and presents a recommended approach and implementation plan for a fuel surcharge mechanism. Toward this end, WSF has collaborated with a subcommittee of the WSTC on the recommended fuel surcharge approach.

Based on the understanding that this plan will satisfy the Transportation Commission's proviso requirement above, the Governor's Proposed Budget, released December 9, 2009, included the following language:

For the Transportation Commission: The commission shall impose a ferry fuel surcharge effective May 1, 2010, in order to provide a mechanism for raising additional revenue in a timely manner to help cover increased costs of ferry fuel that exceed an adopted base level of funding.

The plan recommends a multi-part strategy to address price volatility and cost risks associated with the fuel budget for Washington State Ferries. For each of the recommended elements an implementation schedule is discussed and roles and responsibilities defined. A series of appendices are attached which provide additional support information including:

- Draft rulemaking language describing the authority and methodology of the proposed surcharge program to be added as a new section of the Washington Administrative Code;
- Background and context of current funding challenges faced by WSF and how a fuel surcharge fits into the overall strategy of addressing these challenges;
- Analysis of other industry fuel surcharge programs, including ferry systems, public transit agencies, and private enterprises;
- Discussion of WSF cost management strategies including those targeting consumption of fuel, budgeting, and hedging strategies to reduce volatility; and

- Review of the surcharge options that were evaluated, including a brief discussion of the advantages and disadvantages for each option.

Approach to Managing Fuel Cost Risk

This plan recommends a three-part strategy to manage increasing long-term fuel expenditures and short-term fuel price volatility. In recent years the budget risk associated with fuel prices and price volatility has increased dramatically. Throughout the 1990's WSF's fuel budget stayed within a relatively narrow band around \$10 million per year and ranged from 7% to 12% of annual operating expenses. Since 2000, annual fuel costs have ranged from a low \$15 million to a high of more than \$50 million and have accounted for between 10% and 23% of total operating costs.

The key elements of the proposed fuel cost mitigation strategy include two cost-related elements in addition to the revenue-focused fuel surcharge mechanism:

- **Manage market exposure risk.** Implement fuel price hedging strategies to manage WSF's exposure to price swings and improve the budgeting and forecasting practices to improve budget stability.
- **Conservation.** Continue to implement current fuel efficiency measures and explore new ways to conserve fuel, while maintaining the existing level of service. Fuel conservation strategies may include scenarios that have greater service impacts in periods of significant price increases.
- **Fuel surcharge.** Implement a fuel surcharge mechanism that is designed to recover a portion of fuel costs that exceed the budget expectations for the price of fuel.

Cost Management Recommendations

On the cost management side of the equation, WSF is recommending several key strategies that will help mitigate cost risks, including:

- Develop a price hedging program and strategy to improve budget stability by mitigating the risk associated with short-term fuel price fluctuations. The hedging strategy must be limited to mitigating risk and the Department should avoid taking positions that would result in speculating on the direction of future price fluctuations and thus increase the state's financial exposure. Hedging positions should be taken into account at the time of budget development.
- Modify fuel budgeting practices so the fuel budget is not based on a single forecast price of fuel. The Department should develop an improve process for determining fuel prices for budgeting purposes. Options under consideration include: (1) using a weighted average of the four most recent forecasts; (2) a consensus approach using other forecasts, such as the short-term energy outlook provided by the US Energy Information Administration; and, (3) review of pricing in the fuel futures markets.
- Continue implementing fuel consumption strategies including investments in vessel and terminal improvements designed to reduce fuel demand. In addition, WSF should also be continually reviewing its operations and, especially in times of higher fuel prices, making adjustments that might reduce fuel consumption.

Revenue Enhancement (Fuel Surcharge) Recommendations

In terms of revenue enhancement, it is recommended that the WSTC adopt a fuel surcharge mechanism and policy framework as a separate component of the fare structure that would enable WSF to administer a surcharge to partially mitigate the effects of higher fuel prices. The proposed mechanism

needs to be an automatic function, with no administrative discretion. For a fuel surcharge mechanism to operate in a timely manner, the Commission must adopt a fuel surcharge methodology in the Washington Administrative Code (WAC), through the regular rulemaking process, and then the methodology must dictate when and how the surcharge would be applied.

It is the intent of this recommendation that the fuel surcharge be a mechanism to allow for partial mitigation of costs associated with unexpected increases in fuel prices between budget setting opportunities. The mechanism that is proposed is designed to work within the framework of the legislative budget process and to neither limit nor impose any particular budget solution. Rather, the goal is to provide the legislature with an additional mechanism whereby the risk associated with future unexpected increases in fuel prices can be shared between customers and state taxpayers.

The proposed surcharge mechanism is designed to be both transparent and simple to calculate. The intent of the fuel surcharge is to reduce but not completely eliminate WSF's exposure to the effects of fuel price volatility. The purpose is primarily to manage budget risk between legislative budget setting opportunities. As proposed, the surcharge would work as follows (see page 10 for details):

1. A calculation of costs of diesel fuel would be based on a monthly review process that uses the indexes of Tacoma and Anacortes fuel price data, weighted according to WSF's purchasing pattern, and would serve as a readily available proxy for fuel costs by month.
2. If actual costs of fuel are higher than the budgeted price of fuel, as adopted by the legislature in the ferry operating budget, then a fuel surcharge would be triggered. For example if actual prices for the previous month averaged \$2.20 per gallon and the budgeted price of fuel was \$2.00, then fuel costs for that month would be 10% over budgeted prices. (If hedging activities have reduced the cost of fuel, these gains would be factored into the average price of fuel calculation).
3. Since fuel accounts for approximately 20% of total costs a 10% increase in fuel would mean an overall cost impact on ferries operating budget of approximately 2%.
4. To recover these costs from operating revenues, revenues would need to increase at a higher percentage than costs, since WSF only recovers about 70% of its costs from operating revenues. So a fuel surcharge would need to be set to about 3%, to recover the higher costs from operating revenues (3% of operating revenues would be equal to 2% of total operating costs, since costs are higher than operating revenues).
5. The 3% surcharge would then be applied to all fare categories

The following are some of the more detailed elements of the how the surcharge methodology would be implemented:

- Due to WSF's regional fare integration agreements, any price changes must occur on the 1st of the month.
- Monthly fuel surcharge adjustments, where warranted by fuel price changes, could – and should – be made automatically, as per a set formula established by the Washington State Transportation Commission and adopted in the Washington Administrative Code.
- The budgeted price of fuel would be established by the most recent WSF budget, and would be "reset" by subsequent legislative budgetary actions.

- A calculation of costs of diesel fuel would be based on a monthly review process that uses the indexes of Tacoma and Anacortes fuel price data, weighted according to WSF's purchasing pattern, and would serve as a readily available proxy for fuel costs by month.
- The fuel surcharge would be determined solely based on the degree to which actual fuel prices diverge from the "threshold price of fuel" established in the WSF budget. Possible elasticity effects of higher prices would be ignored for the purposes of calculating the surcharge.
- To integrate the surcharge with the hedging program, any gains from hedging activities must be accounted for in the calculation of actual fuel prices. In effect, if hedging has limited WSF's exposure to the full impact of market prices, then any gains from hedging would be used to discount the index of market prices to reflect WSF's actual fuel costs for a particular month.
- Fuel surcharges would be rounded to the nearest five cents, would be separately identified from regular fares, and the revenues would be segregated within the Ferry Operating Account so as to be used solely to defray fuel costs.
- To ensure that the surcharge is applied only when there is a reasonably substantial increase in fuel prices, the surcharge would only be implemented if the surcharge percent is greater than 2.5%.
- To provide customers with some relative certainty about potential surcharge impacts, the proposed methodology would cap the surcharge at 20%.

Exhibit ES-1 presents an example of the impacts of the proposed methodology on several example fares. In the example below it is assumed that the threshold price of fuel is equal to \$2.58 (proposed budget price for FY 2011). If prices increased to \$3.00 (net of hedging gains), then a 4.3% fuel surcharge would be automatically applied, which would result in a fuel surcharge of 50 cents, increasing the total price for a Seattle-Bainbridge car & driver fare from \$11.85 to \$12.35.

**Exhibit ES-1
Implications of Proposed Fuel Surcharge Methodology**

Threshold Price of Fuel equal to \$2.58 (Proposed Budget for FY2011)								
		<u>Seattle-Bainbridge Island</u>			<u>Mukilteo-Clinton</u>		<u>Anacortes-Friday Harbor</u>	
Hedging- Adj. Actual Fuel Price	Increase over Threshold	Surcharge Amount	Fuel Surcharge	Total Price	Fuel Surcharge	Total Price	Fuel Surcharge	Total Price
\$2.58	0.0%	0.0%	\$0.00	\$11.85	\$0.00	\$6.85	\$0.00	\$37.90
\$2.75	6.6%	1.8%	\$0.00	\$11.85	\$0.00	\$6.85	\$0.00	\$37.90
\$3.00	16.3%	4.3%	\$0.50	\$12.35	\$0.30	\$7.15	\$1.65	\$39.55
\$3.25	26.0%	6.9%	\$0.80	\$12.65	\$0.45	\$7.30	\$2.60	\$40.50
\$3.50	35.7%	9.5%	\$1.15	\$13.00	\$0.65	\$7.50	\$3.60	\$41.50

Exhibit ES-1 is only an illustrative example. The actual implications would depend on both the final budgeted price of fuel established by the Legislature as part of the budget process and the actual price of fuel once a surcharge mechanism is in place. Also, the example only highlights the effects on three example fares. If implemented, the surcharge would apply to all fare categories on all routes, placing the burden of excessive fuel costs on all ferry customers.

Timing Impacts on Different Fare Media

The fuel surcharge would affect various fare media differently. Some riders wouldn't pay the surcharge until their previously purchased tickets were used up; conversely, some riders may pre-purchase tickets at a higher rate and overpay if the surcharge were reduced. Fares will fall into three different categories:

Category 1 – Fares that could be out of synch when implementing or removing a fuel surcharge. The total fare amount would go up on the first of the month of a new surcharge. Riders would have the ability to buy and store in advance at a lower price (good for 90 days) but could run the risk of “overbuying” at a higher rate if total fare amounts drop below their purchase price when a surcharge is reduced or eliminated. This category includes the following fares:

- Single full fare passenger and vehicle Wave2Go tickets (including oversized vehicles).
- Single senior/disabled passenger and vehicle Wave2Go tickets (including oversized vehicles).

Category 2 – Fares that would likely always be at least partially out of synch with a fuel surcharge, such as multi-ride cards and automatic revalue cards. This category includes:

- Multi-ride cards for passengers and under 20’ vehicle/driver fares. Riders would have the ability to buy and store in advance at a lower price (good for 90 days) but could run the risk of “overbuying” at a higher rate if fares dropped below their purchase price.
- Multi-ride cards for passengers and under 20’ vehicle/driver with automatic revalue.
- Multi-ride cards (referenced as “bundled” single fares in the WAC) for senior/disabled passengers and under 20’ vehicle/driver with automatic revalue.

Category 3 – Fares that would always be in synch with a fuel surcharge. This category includes:

- Monthly Passenger Passes – this fare media is good for a single calendar month and is available on a Wave2Go card or on the ORCA card (except for the Anacortes/San Juan Islands/Sidney B.C. service area). The price of the pass would go up (or down if coming off a surcharge) accordingly starting with its availability two weeks prior to the first of the month when revised surcharge fares go into effect.
- Single full fare passengers using an e-purse on the ORCA card.
- Senior/Disabled passengers using an e-purse on the ORCA card.

Fuel Mitigation Strategy Reporting

Since the fuel surcharge is part of a broader fuel cost mitigation plan that is designed to be complementary to the regular budget process, it is recommended that WSF prepare an annual report to the Legislature, Office of Financial Management (OFM), and WSTC summarizing the performance and effects of the surcharge on both revenues and ridership. This would include reporting on all three elements of the ferry fuel cost management program: fuel purchasing and the financial impacts of any hedging strategies employed; fuel savings measures, both progress on the programmatic elements and any service adjustments implemented to conserve fuel; and the performance and impacts of the fuel surcharge.

The regular annual report would be included as part of the Department’s budget submittals and would provide the necessary supporting information for the Governor’s Office and the Legislature to make budget decisions regarding both the future spending authority for fuel purchase as well as whether to assume revenues from the continuation or modification of fuel surcharges.

In addition, for the fuel surcharge, WSF would publish the supporting documentation for how the surcharge is calculated. This documentation would clearly identify the source of fuel price information and how the surcharge percent is calculated. This would be updated as the surcharge is adjusted to actual changes in fuel prices.

Fuel Cost Mitigation Plan Next Steps

Since this fuel cost mitigation plan introduces a new component to the fare structure as well as changes to WSF operations and budgeting, there will be multiple development and implementation steps occurring in the next three fiscal years. Each of the primary components and proposed schedules are briefly described below.

1. **Implement Fuel Surcharge (As soon as May 2010).** WSF is supportive of the Governor's proviso to the Commission that it put in place a fuel surcharge by May 1, 2010. The Commission is interested in making sure that the fuel surcharge mechanism is available to the Legislature and OFM as soon as this date, pending Legislative direction on this issue. Therefore, the Commission has taken the first step in the rule making process, providing notice to the public that a fuel surcharge may be implemented pending further direction from the Governor and Legislature on an agreed to timeframe for implementation.
2. **Continue to Pursue Fuel Saving Strategies (Ongoing).** WSF has implemented a number of fuel conservation initiatives and continues to evaluate and implement additional fuel-savings actions in the 2009-11 biennium. These initiatives aim to reduce fuel consumption through vessel upgrades, running on fewer engines, alternative docking procedures, more efficient loading and unloading, and slowing vessels down during non-peak periods. WSF will continue to pursue these strategies and investigate other possible methods of reducing fuel consumption.
3. **Revise Budget Practices for Fuel (Base 2011-13 budget on new practices).** For the balance of 2010, WSF will work with Office of Financial Management (OFM) and the Transportation Revenue Forecast Council to develop an alternative approach to current fuel budgeting and forecasting practices. An emphasis will be placed on strengthening the near-term fuel price forecast by identifying a consensus forecast of fuel prices that would incorporate multiple industry perspectives and then incorporating this near-term forecast with Global Insight's 16-year long-range forecast.
4. **Develop and Implement Price Hedging Policy (2011-13).** Efforts have begun to develop a hedging policy, identify the most appropriate hedging technique, and gather information needed to make a decision on whether to proceed. It is expected that WSF's hedging policy and program will be included in the 2011-13 budget proposal and start in FY 2011. Once the hedging program is implemented any gains from hedging shall be used to discount the index of market prices to reflect WSF's actual fuel costs for a particular month.

FUEL COST MITIGATION PLAN

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BACKGROUND, CONTEXT AND FUEL COST MANAGEMENT CHALLENGE

Recent Financial Challenges

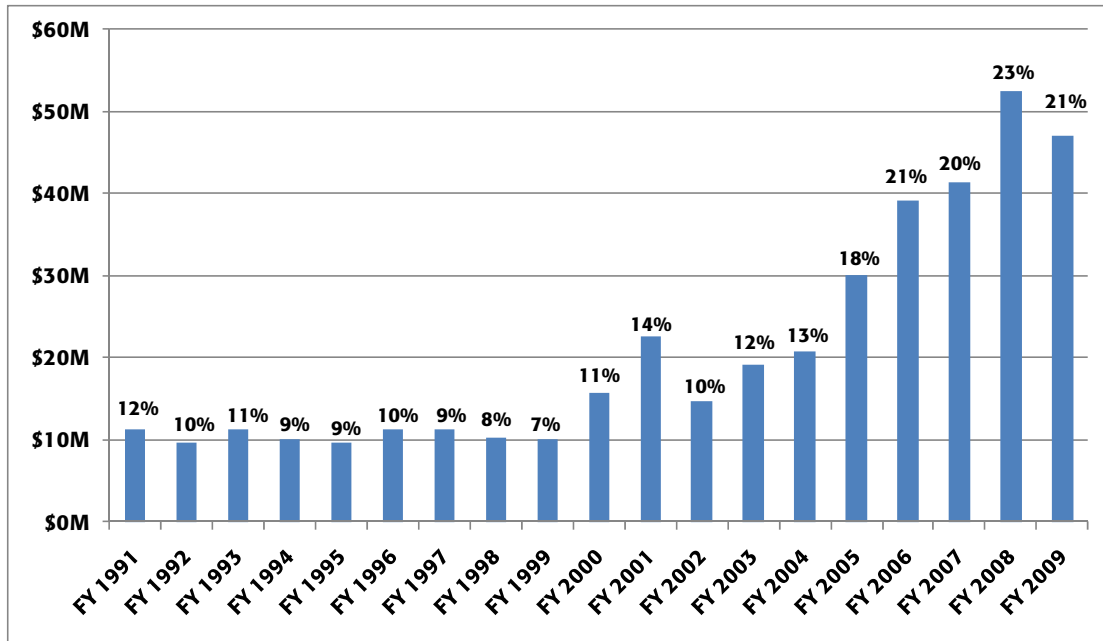
WSF faces two distinct, but equally significant, financial challenges as it continues to operate the largest ferry system in the nation. The first is a funding challenge that relies on increasingly scarce tax dollars to supplement WSF's operating and capital budgets. The second challenge involves mitigating the financial risks associated with being among the state's largest fuel consumer in a time period that has experienced wild swings in the price of fuel.

Prior to 1999, WSF received almost 20% of its operating support and 75% of its dedicated capital funding through the Motor Vehicle Excise Tax (MVET). WSF lost this revenue source in November 1999 when voters approved I-695 and the Legislature codified MVET tax reductions. In order to replace the gap left by the loss of MVET and increase the overall farebox recovery rates, fares have been increased between 37% and 122%, varying by route, since 1999. While these fare increases have resulted in a significant increase in operating revenues, the overall effect on cost recovery rates has been modest because fuel costs are at historically high levels of total costs.

As illustrated in **Exhibit 1**, between 1991 and 2008 fuel costs have increased from an average of 10% of WSF's total operating budget throughout the 1990s to consistently more than 20% in the past several years. Rapidly increasing fuel costs have offset most of the farebox recovery gains made in the early 2000s. The recent increases in fuel prices have pushed fuel costs from approximately \$10M per year during the 1990s to more than \$50M in FY 2008. Given that the dedicated taxes and operating revenues are insufficient to recover operating costs, most of the additional fuel costs have been borne by state taxpayers as general gas tax funds are redirected by the Legislature to cover these unexpected costs.

With fuel prices not expected to return to the lower levels experienced between 1980 and 2000, WSF is considering options to meet the challenges posed by higher and more volatile fuel prices. The challenge is finding a balance between consumption-based cost management strategies, hedging strategies, and increasing farebox revenues, perhaps through the implementation of a fuel surcharge.

Exhibit 1
WSF Fuel Costs and % of Total Operating Costs (FY 1991 – FY 2009)



Source: WSF Route Statements (FY 1999 – 2009)

Historical Fuel Prices

The average price per gallon of diesel fuel, as displayed below in **Exhibit 2**, grew slowly in nominal dollars up until the mid 1970's, when the oil embargo drove prices up significantly before dropping back down to a new higher level. In the early part of this century there was a second major price adjustment. While prices have declined somewhat in the last year due to the weak global economy, high fuel inventories, and declining global oil demand, most forecasters expect oil to stabilize at a higher price point going forward.

Most long-term projections of the global fuel market depict fuel prices increasing on average about 2% to 4% per year over the next 15 years. This rate of price inflation would suggest that fuel prices will grow at or somewhat above general inflation. Market instability and short-term price fluctuations will be the norm going forward. As a result, fuel costs actually present two separate but interrelated financial challenges for WSF:

- (1) There has been a structural shift in fuel prices, with fuel accounting for more than 20% of WSF operating costs, versus 10% for much of the past 30 years. WSF revenue sources have not been adjusted to reflect this structural shift.
- (2) Fuel price volatility has resulted in frequent budget adjustments, putting additional strain on limited state transportation funds.

Exhibit 2
Historical U.S. Fuel Prices (1920 – 2010)

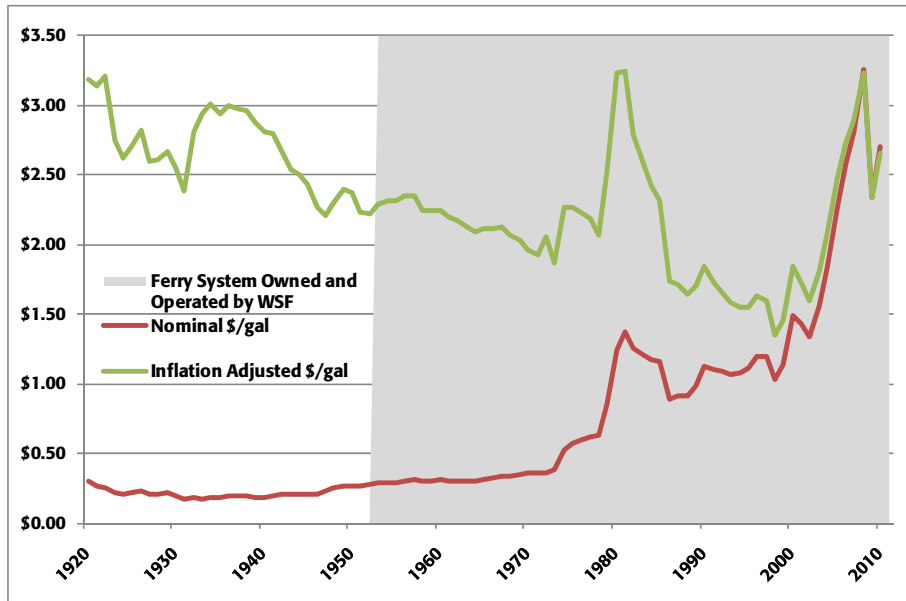
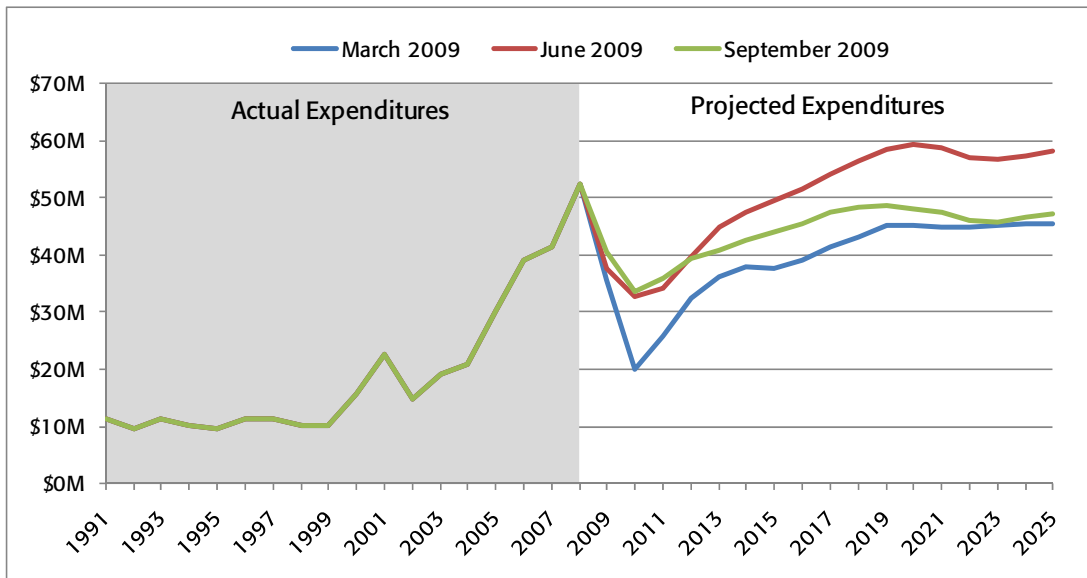


Exhibit 3 presents projected fuel expenditures (excluding taxes) for the next 16 years based on the baseline forecast of fuel prices from each of the previous three quarterly revenue forecasts.

Exhibit 3
Actual & Projected Fuel Expenditures FY 1991 – FY 2025



Source: OFM Transportation Revenue Forecasts; WSF Fuel Consumption Estimates and Route Statements

Long-Range Plan Strategy

The WSF Long-Range Plan, adopted in June 2009, included operating and pricing strategies designed to manage demand and reduce financial risks. The operating strategies proposed, such as vessel upgrades and slowing boats in off peak periods, focused on reducing fuel consumption to reduce exposure to fuel price swings.

The primary pricing strategy that was recommended was to develop and implement a fuel surcharge program to mitigate the financial risks of future fuel price fluctuations. The basic concepts of a potential fuel surcharge plan were presented to the Legislature and discussed during the 2009 legislative session. The fundamentals of the fuel surcharge plan, as presented to the Legislature, included:

- A fuel surcharge that would automatically adjust fares up and down to reflect increases and decreases in fuel prices above a pre-determined base fuel price.
- The customer's total fare would be subject to automatic increases in periods of rapid fuel price escalation, effectively passing on this direct operating expense to those benefiting from the service.
- The base fuel price was set at a price that was equal to the inflation adjusted average cost of diesel from 1952 to 2008 (\$2.15 per gallon), the time period over which the State has owned and operated the ferry system.

The structural shift to much higher fuel prices relative to historical levels has created a difficult state budget problem. The solution to the problem would combine additional revenue support, fuel conservation measures, and price hedging strategies to effectively manage future fuel costs. WSF has begun to implement fuel conservation measures and has the authority to enter into hedging contracts to stabilize fuel prices. The question of how to generate additional revenues (i.e. who should pay for the increases in fuel) becomes the central piece of WSF's fuel management strategy.

The commonly held view of the Washington State highway system is that dedicated tax dollars should be used to support the overhead, capital expenditures, and maintenance of highways. Under this construct, tax dollars received by the ferry system, a marine highway, should support Department overhead, WSDOT overhead, terminal maintenance, and capital expenditures. Operating revenues, including fare revenues, would conversely generate the revenue needed to fund costs that are not typical of the highway program, particularly vessel operating expenditures (including labor, fuel, and maintenance) and terminal operations. Under this paradigm, a policy case could be made that the higher level of fuel costs should be passed through to the customers that are using the system. However, it is unrealistic to assume customers could always assume the full burden of fuel costs, especially in an environment where prices are increasing very rapidly.

WSF'S COST MANAGEMENT PLAN TO ADDRESS FUEL COST VOLATILITY

In order to address fuel price volatility and reduce its exposure to increasing fuel costs, WSF's options include reducing operating costs and/or increasing revenues. WSF has already benefited from some cost savings through fuel conservation measures. Beyond these measures, WSF's options for reducing fuel expenditures include further conservation measures or eliminating sailings. Fuel conservation measures were proposed in the WSF Long-Range Plan and JTC Vessel Sizing study related to reducing fuel consumption through vessel upgrades, alternative docking procedures, and slowing vessels down during non-peak periods. On the revenue side, WSF can mitigate its exposure to fuel price shocks through a fuel

surcharge. WSF is also exploring fuel price hedging to reduce volatility. Additionally, new revenues generated through taxes could help offset fuel price spikes.

Fuel Conservation Measures

WSF implemented a number of fuel conservation initiatives in the 2009-11 biennium. These initiatives aim to reduce fuel consumption through vessel upgrades, running on fewer engines, alternative docking procedures, and slowing vessels down during non-peak periods. An estimated 2.9 million gallons of fuel, or more than 9%, would be saved annually if WSF could implement all the fuel conservation measures displayed below in **Exhibit 4**.

**Exhibit 4
Fuel Conservation Measures**

Vessel Specific Strategies

Jumbo Mark II	Operate on two engines – Implemented except during landings	540,000 gal/year for 3 ferries Implemented
Jumbo Mark I	Upgrade control systems to run vessels on 3 engines instead of 4	142,000 gal/year for 2 ferries Await sea trials & establishment of operational procedures
Super Class	Upgrade engines and associated systems to enable running on 2 engines instead of 4	387,000 gal/year for 3 ferries In Engineering Design phase
Issaquah Class	Running in split mode	Not yet determined To be investigated through operational testing
Issaquah Class	Use waste heat recovery to heat vessels	Up to 61,000 gal/year per vessel Investigating whether installation cost can be reduced

System Wide Operational Strategies

	Develop alternate tie-up method for vessels, allowing a reduction in shaft speed while docked	145,000 gal/year per vessel Await approval of grant requested for pilot project
	Slow vessels down 0.5 to 1.0 knots (see Error! Reference source not found.)	Up to 2.5% savings for 0.5 knot reduction and 5% for 1.0 knot reduction Assessing service impacts at route level
	Improve loading and unloading times	Not yet determined

Source: WSF 2009 Long-Range Plan

The uncertainty of how much fuel prices will fluctuate in the future and more importantly how long prices will stay high relative to historic levels makes it difficult for WSF to meaningfully manage fuel cost risk on the consumption side only. WSF’s ability to respond to short-term price spikes is relatively limited, and long-term fuel consumption options such as eliminating sailings, routes, or operating a

smaller fleet size would be costly and negatively impact the level of service goals established in the 2009 Long-Range Plan.

While the strategies identified in the Long-Range Plan and summarized in **Exhibit 4** have been designed to balance fuel conservation with minimal service disruptions, WSF may need to consider more severe consumption reduction efforts in periods of particularly high or quickly rising fuel prices. For example, it may be desirable to consider options such as eliminating low productivity sailings altogether, which would reduce the frequency of departures during lower demand periods. Clearly this option would have a more severe customer impact, but would also save significant fuel. The key issue, especially if a fuel surcharge is available, will be to weigh the potential service impacts on relatively few customers versus the impact of higher fares on all customers. For example, since the surcharge will only mitigate some of the fuel cost exposure, WSF will face choices about whether to reduce costs through lower consumption as a way to further limit the cost impacts on the budget.

Current WSF Fuel Contract

WSF currently procures all of its fuel through a state contract. Prices are paid to vendors three to four times per month and are based mostly on the Tacoma Oil Price Information Service's (OPIS) index, but also the Anacortes OPIS. Prices paid to vendors include fees and applicable state and local taxes (including retail sales taxes). The Legislature amended RCW 43.19.642 in the 2009 legislative session and mandated WSF to use a minimum of five percent biodiesel for the operation of vessels as long as the per gallon price premium paid for the biodiesel blend did not exceed five percent of regular diesel. All other state agencies are required to use a minimum of twenty percent biodiesel.

Market Exposure: Fuel Price Hedging

The Legislature passed House Bill (HB) 2746 during the 2008 legislative session, now codified as RCW 47.60.830, authorizing WSF to explore and implement fuel purchasing strategies such as price hedging to reduce the overall cost of fuel and mitigate the impact of market price fluctuations. WSF maintains flexibility in determining the type of hedging strategies that might be implemented, and must periodically report back to the legislative transportation committees the status of implemented strategies beginning one year after the initial year of implementation. Efforts have begun to develop a hedging policy, identify the most appropriate hedging technique, and gather information needed to make a decision on whether to proceed.

Fuel price hedging is a tool used to improve budget stability by mitigating exposure to short-term fuel price volatility. Price hedging is particularly useful for businesses that buy large amounts of a fuel and want to limit their exposure to price volatility, i.e. smooth out the peaks and valleys of highly volatile fuel prices and make budgeted fuel costs more predictable.

There are many different types of hedging tools available to WSF and most can be separated into two broad categories: (1) Financial and (2) Physical. Physical price hedging involves contracting for the purchase of fuel at a determined fixed future price. Physical price hedging is convenient from an accounting standpoint in that fuel is simply paid for when it is consumed at the pre-determined fixed price.

Financial price hedging involves the use of financial instruments that derive their value from the price of fuel. These instruments are used in order to partially or completely offset the risk associated with fuel price fluctuations by locking in the price on some or all of the projected fuel consumption for a specified period of time. Financial hedging instruments exist and operate independently of WSF fuel purchases.

They are linked only by the fact that when the cost of fuel from the supplier changes, the value of the hedging instrument changes in proportion thereby offsetting some or all fuel price changes.

Fuel price hedging is common for private businesses, particularly transportation firms, in which fuel price fluctuations would severely impact business performance. Many large transit agencies such as King County Metro, Tri-Met (in Portland), BC Ferries, and Washington Metropolitan Area Transit Authority engage in fuel price hedging. It is uncommon for businesses to hedge 100% of their fuel purchases. However, many do hedge 50% to 90% of total fuel purchases within a contract period and typically overlap hedge contracts. A key factor in choosing what portion of fuel that would be hedged is the degree of predictability in the organizations consumption. The more predictable the consumption, the higher the share of fuel purchases that could be effectively hedged.

Market Exposure: Determining the Price of Fuel for WSF Budget

Determining the price of fuel for budgeting purposes is difficult. Currently WSF's budget requests rely primarily upon one forecast, provided by Global Insight, to determine its expected fuel costs for the remainder of the current fiscal year and subsequent budget periods. In recent years, the forecast, which is updated quarterly, has changed substantially for the same expected budget period. For example, between the time the Governor's Budget was proposed last year (December proposed budget, using the November Forecast) and when the budget was adopted by the Legislature (April, based on the updated March Forecast), the forecast average price of fuel for budget year FY 2010 decreased by 33% (from \$1.95 to \$1.30).

While in hindsight this reduction in the price assumed for the purposes of setting the budget appears difficult to justify, it important to note that when the March forecast was completed, the recent fuel price history showed the price of fuel dropping from its high of \$4.62 per gallon on July 14, 2008 to a low of \$1.25 per gallon on March 16, 2009. At that time there was much uncertainty about the future direction of the US and world economies, which is a significant factor in the world price of oil. As it turned out, this market was at the bottom of the price drop and prices rebounded more quickly than expected.

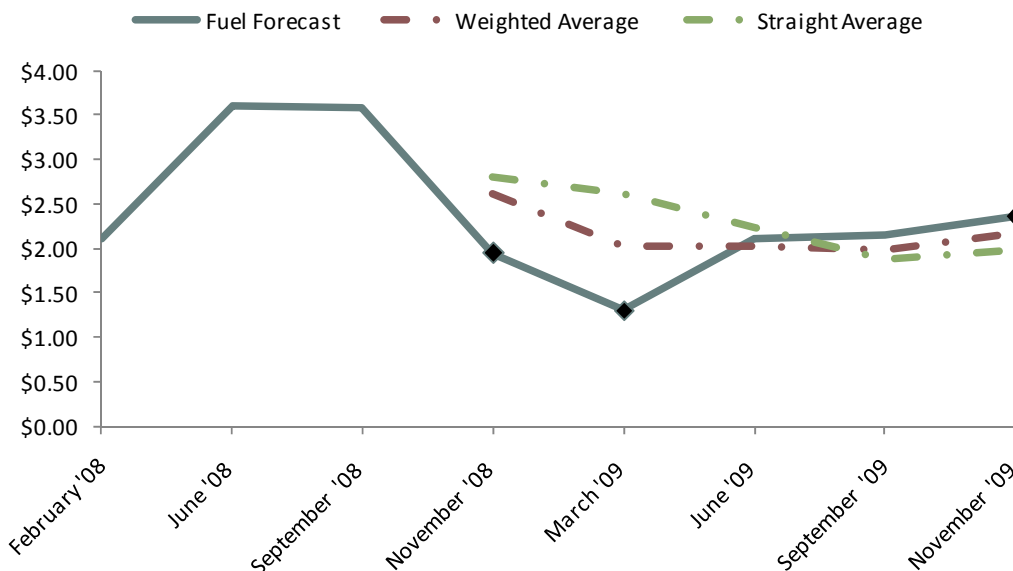
What this example shows is that not only is fuel price forecasting challenging in the best of times, but that precisely because of these forecasting challenges, by basing a budget on only one forecast, additional budget risk is introduced into the process. In this case, the March forecast for FY2010 and FY2011 turned out to be outliers when compared to forecasts before and since. This is why relying on a single forecast places more risk around budget stability. The Global Insight forecast does provide a 16-year projection of fuel costs, which is necessary for developing the long-term financial plan for WSF, however the budget strategies proposed in this section focus on the near-term part of the forecast and the desire to reduce the amount of budget uncertainty within a two-year budget window. Some of the near-term strategies could include:

1. **Averaging most recent forecasts.** WSF can mitigate some of this budget risk by using a weighted or straight average price of prior fuel forecasts or a consensus of multiple published fuel forecasts. **Exhibit 5** below illustrates the effect of averaging using the last eight is to forecasts for FY2010 fuel prices as an example. In this example, the last four Global Insight forecasts would be used, and the most recent forecast is given the most weight in determining the average. This weighting scheme places the greatest weight on the most recent information, with 50% of the price based on this forecast, with the previous forecast accounting for 25%, 15% and 10% respectively. The effect of either method is to reduce the quarter-by-quarter volatility in

price forecasts, which would reduce the risk of falling on an outlier, where the budgeted price of fuel is either unusually high or low in relation to recent forecasts.

2. **Gathering additional information on near-term fuel using futures market.** Fuel futures are short-term price expectations for fuel that cover a 3 to 24 month time-period and can provide additional information that could impact the underlying assumptions used to determine WSF’s fuel budget. The use of fuel futures market, such as heating oil, would be preferred since heating oil futures are highly correlated to the price Ferries pays for its fuel.
3. **Incorporating WSF actual hedging positions into budget development process.** Once hedging is underway, a portion of future fuel costs will be “known” and should be factored into determining the budget.
4. **Building a consensus near-term forecast.** Use multiple respected sources such as the Department of Energy’s Short-Term Energy Outlook to determine the budgeted price of fuel. This would allow WSF to incorporate additional perspectives on short-term (12-36 month) fuel prices movement. This consensus forecast would be integrated into WSF’s ongoing budgeting practices and would also be synched up with Global Insight’s 16-year forecast.

Exhibit 5
Illustrative Example of Effect of Averaging (FY2010 Price of Fuel)



Note: Lines showing the rolling averages of the most recent four forecasts start in November 2008 and reflect the averages of current forecast plus the previous three.

FUEL SURCHARGE BUSINESS PLAN

It is the intent of this recommendation that the fuel surcharge be a mechanism to allow for partial mitigation of costs associated with unexpected increases in fuel prices between budget setting opportunities. Working cooperatively, WSF and the Transportation Commission identified the following organizing principles that were used to fully develop the fuel surcharge program:

- The intent of a fuel surcharge is to provide a nimble mechanism that is responsive to volatile fuel prices that exceed Legislative expectations as identified in the WSF budget. The surcharge would provide additional revenue to cover fuel costs in situations of extraordinary and unpredicted price increases.
- Monthly adjustments, where warranted by fuel price changes, could--and should--be made, based on the date of ticket purchase, except for monthly passes, which would be based on the month of usage.
- Customers would be notified 30 days in advance of any imposition or modification to a fuel surcharge. In addition to using its website, broadcast emails and other customer notification channels, WSF will issue press releases and work with local news organization to ensure accurate information is efficiently disseminated. There will be a dedicated section on the WSF website to describe the basis of the surcharge, show how the calculation works and informs customers of any upcoming changes.
- In order to provide the public with a clear understanding of how the fuel surcharge program would work, the proposed mechanism would be both transparent and simple to calculate.
- The key element of this mechanism is the “threshold price of fuel”, which defines the baseline price above which a surcharge would apply. The recommended approach is to use the per gallon price of fuel used by the Legislature to develop the WSF budget as the threshold price.
- Fuel surcharges, rounded to the nearest five cents, would be separately identified from regular fares and the revenues would be segregated within the Ferry Operating Account so as to be used solely to defray fuel costs.
- A calculation of costs of diesel fuel would be based on monthly indexes of Tacoma and Anacortes data, weighted according to WSF's purchasing pattern, and would serve as a readily available proxy for fuel costs by month.
- To integrate the surcharge with the hedging program, gains from hedging activities would be incorporated into the index of the actual price of fuel.

Based on these principles, it is best to think of the fuel surcharge as a way to help minimize the impact of increasing fuel prices between budget setting opportunities. Such a fuel surcharge program must be designed to work within the policy and mechanical structure to be set by the Transportation Commission and fit within the framework of WSF's operating budget. Currently, the only way that fuel prices are directly incorporated into the WSF budget is on the expenditure side. When the Governor proposes a budget, the cost of fuel is based on the gallons needed to support a particular service plan and a forecast of the average price of fuel for the next two fiscal years. When the legislature passes its budget, it includes an explicit appropriation to cover fuel costs. It is important to note that WSF cannot spend more than this appropriation, so if prices go up after the budget is passed, then WSF must request additional budget authority through a supplemental budget request.

WSTC and Department Roles

Implementation of this proposed fuel surcharge program is within the WSTC's existing statutory authority to manage and regulate ferry fares. To proceed, WSTC would need to establish the surcharge mechanism via rule making, as a separate, second component of the fare structure. These rules would be codified in the Washington Administrative Code (WAC) and thus subject to the regular code revision process and public review. Once the WAC rules are in place, the implementation of the surcharge would be an automatic process driven by the mechanics established by the Transportation Commission. WSF would oversee the implementation of this process.

Mechanics of Applying the Fuel Surcharge

The mechanics of the recommended fuel surcharge are designed to be simple and automatic.

The proposed methodology includes an automatic trigger that would be set as a percentage above the established threshold price of fuel, and a fuel surcharge would only be imposed if actual fuel prices exceeded this minimum percentage. The fixed formula will be clearly defined in the WAC put in place by the Transportation Commission and would work as follows:

Step 1: Calculate average actual market price of diesel fuel.

- WSF would establish a monthly review process to track average rack price movement for ultra low-sulfur dyed diesel beginning on the 16th of the previous month and continuing until the 15th of the current month as reported by the Washington State Department of General Administration's Office of State Procurement. Since WSF purchases its fuel from both Anacortes and Tacoma, the average monthly price of fuel would be a weighted average of the monthly averages for Tacoma and Anacortes OPIS Rack prices, where the weighting reflects the volume in gallons from each respective location during the previous fiscal year.




Step 2: Adjust for effects of hedging activities over the corresponding period.

- To account for any gains from hedging activities during the month, gains are converted to an effective per gallon fuel saving value that can be subtracted from the OPIS weighted average. The savings shall be calculated by dividing any gains from hedging activities by WSF's budgeted average monthly fuel consumption. The resulting estimate of savings per gallon shall be used to reduce the index of prices to arrive at a hedging-adjusted weighted OPIS index.

Step 3: Determine if hedging-adjusted price is greater than the "threshold price of fuel" and calculate surcharge amount.

- If the hedging-adjusted weighted index did exceed the threshold price of fuel, WSF would use the formula adopted by the Transportation Commission to calculate a fuel surcharge amount.
- This would be done by subtracting the threshold price of fuel per gallon for the current fiscal year from the hedging-adjusted weighted average index over the last month to calculate the per gallon price increase.
- The percentage increase in fuel prices would then be multiplied by the share of budgeted fuel costs to total operating costs for the current biennium.
- The result would then be divided by the budgeted farebox recovery rate for the current biennium. **Exhibit 6** below displays the math used to calculate the resulting fuel surcharge factor if hedging-adjusted fuel prices increased 10% above the threshold price of fuel.

**Exhibit 6
Basic Fuel Surcharge Formula**

	Percent Increase over Threshold Price (Current Month)		Fuel Share of Operating Costs (Budget)		Farebox Recovery Rate (Budget)		Surcharge Amount
EXAMPLE	10%		20%		70%		2.9%

Step 4: If surcharge amount is greater than 2.5% then a surcharge would be applied at the next fare change opportunity.

- An automatic surcharge trigger for implementing a surcharge would be set at 2.5% above all base fares. Establishing this amount avoids making surcharge adjustments when there are only relatively small increases in base fuel costs.
- The fuel surcharge is to be capped at a maximum of 20%. The purpose of the cap is to provide a measure of certainty that even in high fuel inflation periods fare impacts will be limited to a pre-determined amount.
- To minimize the number of surcharge changes each year, the surcharge can only be changed if the current calculated monthly fuel surcharge rate fluctuates up or down by at least an increment of 2.5% from the prior month’s rate. This amount is set such that the surcharge would adjust based on nickel-rounding.
- The amount of any fuel surcharge will be shown separately on customer receipts.
- To facilitate understanding on the part of WSF customers and ensure a transparent process, an explanation of how the surcharge is applied, including a summary of the actual calculation of the surcharge percentage, will be described on the WSF website and available in other formats upon request.

Setting the Threshold Price of Fuel

The threshold price of fuel is the key element in determining whether or not a fuel surcharge would be imposed. In developing this plan several options for setting the threshold price of fuel were evaluated. In the end, it was determined that the preferred approach would be to set the threshold price equal to the price per gallon used to establish the fuel budget.

This approach would be to simply take the price per gallon used for the estimate of fuel cost expenditures in the budget and use this as the threshold price of fuel. In essence, the legislature would set the WSF fuel budget based on the price of fuel used to develop the budget request. The surcharge mechanism would then help mitigate the effects of price volatility by generating additional operating revenue when fuel prices increase beyond the threshold price of fuel assumed in the budget.

If the surcharge were triggered during the Legislative interim, the revenue generated from the surcharge would be in available to assist in funding supplemental budget requests for fuel funding. When the legislature passed its next budget (with the supplemental request) the process would be reset and the surcharge would be based on the fuel prices assumed in the new budget.

This approach is simple and is consistent with the intent of the proposed surcharge mechanism, by having the surcharge be the “last line of defense” for unpredicted price increases that exceed both the

budget expectations for fuel prices and WSF's ability to limit the budget impact of these price increases through hedging. For these reasons, this approach is recommended.

However, it is important to note that this approach does limit the legislature's budget options for using the surcharge to share the risk and responsibility for fuel cost spikes between ferry customers and state taxpayers. To understand why this is the case, it is important to note that the legislature must pass a balanced budget. Currently when fuel costs exceed budget expectations, the legislature has three options to address the shortfall:

1. Limit fuel cost increases by reducing fuel consumption, which would likely require a reduction in service levels to have a meaningful impact.
2. Reallocate existing transportation tax revenues from other state transportation uses (or the WSF capital program) to pay for higher fuel costs.
3. Increase operating revenues by requiring higher than planned fare increases.

Adding a threshold price of fuel that is tied to the budgeted fuel expenditures would not fundamentally add a new option to this list. The best way to illustrate this point is to use the current budget challenge that the legislature will be taking up in the 2010 legislative session, where the Governor's budget includes a supplemental budget request of \$33 million for higher than expected fuel costs for FY2010 and FY2011.

If a surcharge mechanism had been in place at the start of the fiscal year (July 1, 2009), then a surcharge would have been triggered and there would have been additional operating revenues generated to help offset the higher prices for the first six months of the year. This would have had no effect on the supplemental budget request (since WSF cannot spend above its budget authority) but it would have provided additional revenue to fund a portion of the supplemental budget amount.

As a result this option is not a budget tool; rather it is a simple mechanism that would mitigate fuel price risk within the current budgeting period (i.e. fuel surcharge would not carry over to a new fiscal year). This fuel surcharge option relies on the premise that the fuel surcharge is only applied when all cost management strategies have been exhausted and would enable WSF to manage extreme price fluctuations between budget setting sessions.

Revenues and Ridership Effects

A basic principle behind this fuel surcharge program is that surcharge revenue will partially offset increases in fuel costs. Surcharges are applied as percentages above base fares resulting in higher total prices for all customers. As shown in **Exhibit 7**, price elasticity effects result in lower ridership as the surcharge amount increases. Price elasticity of demand, as it relates to ferry ridership, measures the change in ridership as a result of change in fares. Ferry passengers are relatively inelastic (less price sensitive) in that a change in fares does not result in as significant of a change in ridership.

To simplify the calculation of surcharge factors, the recommended fuel surcharge approach does not assume any elasticity effects on ridership. For example, a fuel surcharge of 20% would result in a situation where fuel costs are roughly \$30 million above the budgeted level of fuel expenditures. However, in applying a 20% surcharge, the actual revenues generated are estimated to be closer to \$19 million. Thus, in this example, approximately two thirds of the cost impact is passed through to customers.

Exhibit 7
Farebox Revenue and Ridership Impacts at Different Surcharge Levels

	FY 2010	FY 2011	FY 2012	FY 2013
Baseline Farebox Revenues	\$147.8M	\$155.0M	\$162.5M	\$168.7M
<i>Fuel Surcharge Revenues</i>				
5% Surcharge	\$0.9M	\$5.0M	\$5.3M	\$5.5M
10% Surcharge	\$1.7M	\$9.8M	\$10.3M	\$10.7M
15% Surcharge	\$2.6M	\$14.3M	\$15.1M	\$15.6M
20% Surcharge	\$3.4M	\$18.6M	\$19.5M	\$20.3M
Baseline Ridership	22,918,000	23,450,000	23,919,000	24,180,000
<i>Ridership Impacts of Fuel Surcharge</i>				
5% Surcharge	-71,000	-421,000	-429,000	-433,000
10% Surcharge	-143,000	-843,000	-859,000	-866,000
15% Surcharge	-214,000	-1,265,000	-1,288,000	-1,300,000
20% Surcharge	-285,000	-1,687,000	-1,719,000	-1,735,000

Source: Parsons Brinckerhoff, WSF Revenue Projections for Fuel Surcharge Options

Timing and Frequency of Surcharge Changes

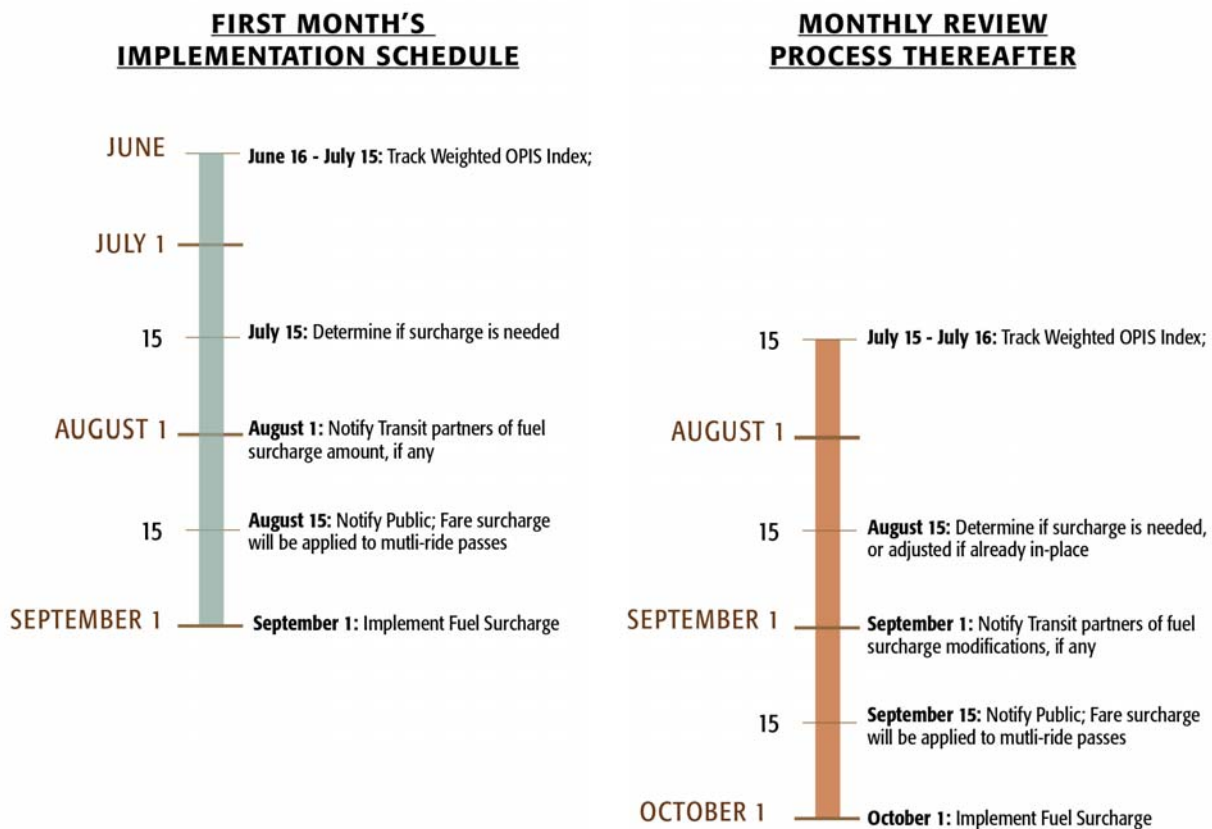
In considering the frequency with which fuel surcharges might be adjusted, there is a tension between wanting to respond quickly to rising fuel costs in order to mitigate the budgetary impacts and the challenge for customers of frequent price adjustments. In reviewing the options for frequency, it was determined that WSF could support a monthly fuel surcharge update process.

WSF is required to notify Sound Transit 30 days prior to a fare change and all fare changes are to be effective on the first day of the month. Administratively WSF already has the ability to support monthly changes in the Electronic Fare System (EFS) and ticketing.

WSF would need to create a regular monthly process to review fuel purchases and implement surcharge where fuel prices warrant and/or service adjustments to reduce fuel consumption. To be an effective fuel cost mitigation tool, WSF will need to minimize the time lags between the surcharge need and actual implementation. Based on the notification requirements, the shortest practical lag will be approximately six weeks. **Exhibit 8** illustrates the process and schedule for review and implementation for the first month of surcharge and the surcharge review and implementation process thereafter. The exhibit is meant to show that the implementation process and review process overlap and the dates selected are for illustrative purposes only.

Exhibit 8

Example of Fuel Surcharge Review, Notification and Implementation Process



- **Starting on the 15th of each month.** Review the average weighted OPIS index versus budgeted amounts for the previous month (mid-month to mid-month) and determine the need for a fuel surcharge. Review information internally to finalize fuel surcharge decision.
- **First of the following month (Two weeks after the beginning of the review cycle).** Notify transit partners of price changes to be implemented at the beginning of the following month (meets requirements for 30 days notice and implementation of fare changes on the first of the month).
- **15 days prior to implementation.** Notify customers of fuel surcharge and price changes to take effect at the beginning of the next month.
- **First of the month (6-7 weeks from the beginning of the review cycle).** Implement new fares.

Timing Impacts on different fare media. The fuel surcharge would affect various fare media differently. Some riders wouldn't pay the surcharge until their previously purchased tickets were used up; conversely, some riders may pre-purchase tickets at a higher rate and overpay if the surcharge were reduced. Fares will fall into three different categories:

Category 1 – Fares that could be out of synch when implementing or removing a fuel surcharge. The total fare amount would go up on the first of the month of a new surcharge. Riders would have the ability to buy and store in advance at a lower price (good for 90 days) but could run the risk of “overbuying” at a higher rate if total fare amounts drop below their purchase price when a surcharge is reduced or eliminated. This category includes the following fares:

- Single full fare passenger and vehicle Wave2Go tickets (including oversized vehicles).
- Single senior/disabled passenger and vehicle Wave2Go tickets (including oversized vehicles).

Category 2 – Fares that would likely always be at least partially out of synch with a fuel surcharge, such as multi-ride cards and automatic revalue cards. This category includes:

- Multi-ride cards for passengers and under 20' vehicle/driver fares. Riders would have the ability to buy and store in advance at a lower price (good for 90 days) but could run the risk of "overbuying" at a higher rate if fares dropped below their purchase price.
- Multi-ride cards for passengers and under 20' vehicle/driver with automatic revalue.
- Multi-ride cards (referenced as "bundled" single fares in the WAC) for senior/disabled passengers and under 20' vehicle/driver with automatic revalue.

Category 3 – Fares that would always be in synch with a fuel surcharge. This category includes:

- Monthly Passenger Passes – this fare media is good for a single calendar month and is available on a Wave2Go card or on the ORCA card (except for the Anacortes/San Juan Islands/Sidney B.C. service area). The price of the pass would go up (or down if coming off a surcharge) accordingly starting with its availability two weeks prior to the first of the month when revised surcharge fares go into effect.
- Single full fare passengers using an e-purse on the ORCA card.
- Senior/Disabled passengers using an e-purse on the ORCA card.

Customer information and notification. Customers would be notified 30 days in advance of any imposition or modification to a fuel surcharge. In addition to using its website, signage on vessels and in terminals, broadcast emails, and other customer notification channels will be used. WSF will issue press releases and work with local news organization to ensure accurate information is efficiently disseminated.

Given the potential for confusion and customer impacts, WSF will also work with the Ferry Advisory Committees to establish communications protocols around fuel surcharge issues. In addition, there will be a dedicated section on the WSF website to describe the basis of the surcharge, show how the calculation works and inform customers of any upcoming changes.

Implications for WSF operations. WSF will experience some operation impacts associated with the process of implementing the surcharge proposal. The following is a list of the types of operational impacts that have been identified to date:

- Initially the IT group will need to program the ticketing system to allow for the addition of a fuel surcharge to the total price of a ticket and to show that surcharge as a separate item on a receipt.
- On a monthly basis, the budget office would need to collect the fuel price data from the Washington State Department of General Administration's Office of State Procurement, calculate the average costs, run the surcharge calculation, and determine if a surcharge needs to be added or modified.
- Once a surcharge needs to be implemented or modified, there will be impacts associated with the communications surrounding the change.

- Also, there is likely to be some customer confusion, especially at the beginning of the process, and so it is likely that calls to WSF customer service agents would increase when a surcharge is implemented or modified.
- At the tollbooths, the fare tables will need to be modified to make clear that the posted fare does not include any potential fuel surcharge amounts.
- There will likely be training requirements for terminal staff to understand how the surcharge works and to be able to explain it to customers. It may be desirable to have a simple brochure that ticket sellers can hand out to customers who have more detailed questions.

Surcharge Rulemaking

Since a new component is being added to the fare structure, the Transportation Commission will need to adopt the framework and mechanics of how the surcharge will be assessed and implemented within the fare WAC. Since changing the WAC is a five to six month process, it is not practical to change the surcharge through the WAC process every time there is a relatively significant change in fuel prices (either up or down). As a result, it will be necessary for the WSTC to adopt fare policy rules that establish an automatic process which incorporates a fuel surcharge formula so that WSF can implement a nimble and responsive surcharge program.

To make the option of a fuel surcharge available to the Legislature as soon as possible, as a means to assist in the funding for ferry fuel in 2010, the following WAC schedule would need to be followed:

- **December 2009**, WSTC filed intent to promulgate rules for implementing a fuel surcharge.
- **February 2010**, WSTC issues the proposed rule language for the fuel surcharge and initiates the public comment period.
- **February-March 2010**, public comment gathered.
- **Mid March 2010**, WSTC holds a public hearing on the proposal and subsequently adopts the final rule.
- **May 1, 2010**, earliest possible date the fuel surcharge could be implemented.

Since the fuel surcharge is part of a broader fuel cost mitigation program that is designed to be complementary to the regular budget process, it is recommended that WSF prepare an annual report to the Legislature, Office of Financial Management (OFM), and WSTC summarizing the performance and effects of the surcharge on both revenues and ridership. This would include reporting on all three elements of the ferry fuel cost management program: fuel purchasing and the financial impacts of any hedging strategies employed; fuel savings measures, both progress on the programmatic elements and any service adjustments implemented to conserve fuel; and the performance and impacts of the fuel surcharge.

The regular annual report would be included as part of the Department's budget submittals and would provide the necessary supporting information for the Governor's Office and the Legislature to make budget decisions regarding both the future spending authority for fuel purchase as well as whether to assume revenues from the continuation or modification of fuel surcharges.

APPENDIX A: DRAFT COMMISSION WAC LANGUAGE FOR FERRY FUEL SURCHARGE

WAC 468-300-050

Fuel Surcharge

- (1) In order to manage the financial risk associated with fuel price volatility, it is hereby declared to be the policy of the Washington State Transportation Commission to implement a fuel surcharge as an added component to the to the regular posted fares for passage on vessels operated by Washington State Ferries (WSF) when actual fuel prices exceed those incorporated and assumed into the department's WSF fuel budget. The total ferry fare charged will consist of the base fare plus the automatic, incremental, additional surcharge as calculated according to the fixed formula set forth in this rule. The department is hereby directed to apply a fuel surcharge to base fares to reflect the impact on WSF fuel costs associated with increases in fuel prices above the budgeted price of fuel. The method for calculating the fuel surcharge shall be as follows: An average hedging-adjusted actual fuel price shall be calculated monthly. Because fuel is purchased from two sources, the average monthly price of fuel shall be a weighted average of the monthly averages for both sources' OPIS Rack Prices, where the weighting reflects the volume of WSF fuel purchases in gallons from each respective location during the previous fiscal year.
- b. The average monthly price shall be calculated for both sources as a simple average of the OPIS Daily contract average rack prices for Ultra Low-sulfur Dyed Diesel fuel as reported by the GA Office of State Procurement from the 16th of the previous month to the 15th of the current month.
 - c. The calculated average cost of fuel shall be adjusted to reflect the financial impacts associated with the department's hedging operations over the corresponding period. This price per gallon adjustment shall be determined by dividing net gains from hedging by average monthly fuel consumption.
 - d. If the hedging-adjusted actual fuel price is greater than the budgeted price per gallon (excluding taxes and fees) for the current fiscal year than the percentage increase in fuel prices shall be calculated by first subtracting the budgeted price per gallon (excluding taxes and fees) for the current fiscal year from the calculated hedging-adjusted average actual price and then dividing the result by the budgeted fuel price (the price of fuel

used for determining the expenditure appropriation).

- e. A fuel surcharge amount is then calculated by as follows:
 - i. Multiply the percentage increase in hedging-adjusted fuel prices by the share of budgeted fuel costs to total operating costs for the current biennium; then
 - ii. Divide the result by the farebox recovery rate for the current biennium (defined as the budgeted fare revenues divided by total Program X operating costs).
 - f. If the resulting surcharge amount is less than 2.5% then there is no fuel surcharge. If the amount is more than 2.5%, then a fuel surcharge shall be added to all ferry fares in an amount equal to the posted fare multiplied by the surcharge factor, with resulting fares rounded to the nearest nickel.
 - g. To minimize the number of monthly changes once a fuel surcharge is in place, the surcharge can only be changed if the fuel surcharge amount changes (up or down) by at least an increment of 2.5%.
- (3) WSF shall estimate the need for a fuel surcharge on a monthly basis, based upon the formula prescribed in this rule, and if a surcharge is to be added or modified, then the department shall:
- a. Notify ORCA partners of the pending surcharge changes at least 30 days prior to implementation of said changes.
 - b. Make all surcharge changes be effective on the first of the month
- (4) The fuel surcharge amount shall be limited to a maximum of 20%.
- (5) The department shall provide an annual report to the Legislature, OFM, and the Washington State Transportation Commission summarizing its fuel cost mitigation activities, including how the department has managed its costs as well as the application, performance and impact of fuel surcharges pursuant to this authority.
- (6) The amount of any fuel surcharge shall be shown separately on customer receipts.
- (7) To facilitate understanding on the part of WSF customers and to ensure a transparent process, an explanation of how the surcharge is applied, including a summary of the actual calculation of the surcharge percentage, shall be described on the WSF website and available in other formats upon request.

APPENDIX B: FUEL SURCHARGE EXAMPLES

Within the last decade, fuel surcharges have become a common tool used by businesses to manage their exposure to fuel price volatility. Typically the risk of high fuel costs are either shared with or passed on entirely to the customer through the fuel surcharge. Fuel surcharge examples are much more common in private industries such as airlines, ground and air shipping, trucking, and cargo. Fuel surcharge examples are less prevalent among public transportation companies.

Three ferry operators were identified in our research as having imposed a fuel surcharge in the last three to five years. Many businesses, both private and public, have decreased the magnitude of fuel surcharges to reflect the recent downturn in fuel prices. Many public agencies, such as the Long Island Ferry, Utah Transit Authority, and BC Ferries have even eliminated a portion or all fuel surcharges. A summary of selected fuel surcharge examples are displayed in **Exhibit B-2** at the end of this appendix.

Ferry Operators

BC Ferries

BC Ferries, which is regulated by the British Columbia Ferry Commission, has used a fuel surcharge to diminish fuel price volatility since 2004. The main features of the fuel surcharge mechanism are:

- A fuel deferral account was set up for each of the seven route groups within the system to stabilize fuel costs and help avoid temporary fuel surcharges.
- Differences between the actual delivered price and the set price, determined by the Commission, is either credited or debited to each route's deferral account after adjusting for any price hedging gains or losses. A negative deferral account balance signifies that fuel costs have been deferred for fuel that has already been used but that still has to be paid for by BC Ferries customers through a fuel surcharge. A positive balance is the result of previous fuel surcharges having more than paid for fuel consumed.
- BC Ferries shares with customers in the first 5 cents per liter of the fuel price over and above base set fuel prices. Fuel costs are transferred to the deferral account when the price per liter is greater than 5 cents above base set fuel prices.
- A fuel surcharge is administered when a route group's month-end deferral account balance exceeds 2% of the annual pre-surcharge tariff revenue for the route group and cannot be adjusted more than once per quarter. BC Ferries must provide at least 15 days public notice of any fare changes.
- The surcharge amount, which is a percentage above base fares, is set so that it eliminates the estimated deferral account balances over a 12 month period.
- Every three months BC Ferries must report to the Commission the actual average level of fares paid by its customers.
- In 2008, the most recent fuel surcharges imposed included a 10.3% surcharge on major routes, 17.6% on minor routes, and 9.2% on the Horseshoe Bay-Langdale route. However, declining fuel prices in the last half of 2008 allowed the removal of all fuel surcharges by the end of December 2008. Furthermore, fuel rebates of 8% have been applied on the minor route groups.
- In order to levy fuel surcharges, the Commission has required BC Ferries to implement a fuel conservation plan that includes vessel speed control, fuel monitors, propeller replacement, hull resurfacing to reduce drag, and scheduling adjustments

Long Island Ferry (Cross Sound Ferry)

The Long Island Ferry, operated by Cross Sound Ferry Services, is a vehicle and passenger ferry route linking the northern tip of Long Island to New London, Connecticut. There is a fixed fuel surcharge of 2% that is applied to all base fares to cover the costs associated with an EPA mandated use of low-sulfur diesel. A floating surcharge component is applied as a percentage surcharge on top of all base fares and is based on the present price of fuel compared to a pre-established base benchmark price. With the recent decline in fuel prices, the floating surcharge is currently at 0%.

State of Rhode Island Fast Ferry (Block Island Ferry)

Beginning in 2006, the Rhode Island Utilities Commission implemented a fuel surcharge for its fast ferry operations. The surcharge was imposed as a \$0.60 surcharge on each one-way fare. The Commission has the statutory authority to levy up to a set maximum surcharge. The maximum surcharge is calculated each month and based on recovering eligible fuel costs above the statutory fuel floor costs of \$1.20 per gallon, using projected monthly fuel usage and ridership.

Other Public Transit

Utah Transit Authority (UTA)

The UTA imposes a fuel surcharge only if the U.S. average On Highway Diesel Fuel price (NADF) reported by the DOE rises above \$3.00 per gallon. A \$0.25 surcharge is applied to base fares for each \$1.00 increment above the \$3.00 per gallon trigger.

Package and Freight Shipping

Fuel surcharges are common practice amongst shipping providers. Many shipping companies- including Fed-Ex, UPS, and DHL- apply a fuel surcharge for both ground and air shipping services. Our research showed that fuel surcharges do not vary widely between companies for ground or air express shipping. Fuel surcharges are typically index-based, increasing or decreasing with the movement of the particular fuel price index. Surcharges are only applied if the index rises above a set threshold price per gallon. Most shipping companies index their air fuel surcharges on the monthly rounded average of the U.S. Gulf Coast (USGC) price for a gallon of kerosene-type jet fuel, published by the U.S. Department of Energy (DOE). UPS indexes its ground surcharge against the U.S. average On Highway Diesel Fuel price (NADF) reported by the DOE. There is a two-month lag between publication of the fuel price index and imposition of the monthly fuel surcharge. For example, September's fuel surcharge paid for ground shipping with UPS is based on NADF price per gallon published in June. Examples of the typical ground and air fuel surcharge indexes and fuel surcharge percentages are displayed below in **Exhibit B-1**.

**Exhibit B-1
Example of Ground and Air Shipping Fuel Surcharges**

Ground Shipping			Air Express Shipping		
But Less			But Less		
At Least:	Than:	Surcharge:	At Least:	Than:	Surcharge:
\$0	\$1.50	0.00%	\$0	\$1.30	0.00%
\$1.50	\$1.58	0.50%	\$1.30	\$1.34	0.50%
\$1.58	\$1.66	0.75%	\$1.34	\$1.38	1.00%
\$1.66	\$1.74	1.00%	\$1.38	\$1.42	1.50%
\$1.74	\$1.82	1.25%	\$1.42	\$1.46	2.00%
\$1.82	\$1.90	1.50%	\$1.46	\$1.50	2.50%
\$1.90	\$1.98	1.75%	\$1.50	\$1.54	3.00%
\$1.98	\$2.06	2.00%	\$1.54	\$1.58	3.50%
\$2.06	\$2.14	2.25%	\$1.58	\$1.62	4.00%
\$2.14	\$2.22	2.50%	\$1.62	\$1.66	4.50%
\$2.22	\$2.30	2.75%	\$1.66	\$1.70	5.00%
\$2.30	\$2.38	3.00%	\$1.70	\$1.74	5.50%
\$2.38	\$2.46	3.25%	\$1.74	\$1.78	6.00%
\$2.46	\$2.54	3.50%	\$1.78	\$1.82	6.50%
\$2.54	\$2.62	3.75%	\$1.82	\$1.86	7.00%
\$2.62	\$2.70	4.00%	\$1.86	\$1.90	7.50%
\$2.70	\$2.78	4.25%	\$1.90	\$1.94	8.00%
\$2.78	\$2.86	4.50%	\$1.94	\$1.98	8.50%
\$2.86	\$2.94	4.75%	\$1.98	\$2.02	9.00%
\$2.94	\$3.02	5.00%	\$2.02	\$2.06	9.50%

Source: Websites for UPS, FedEx, and DHL.

Airlines

As of 2008, the majority of airline companies have a fuel surcharge. Airlines also impose a fuel surcharge for commercial cargo services. Some have scaled back domestic surcharges, but continue to impose fuel surcharges on international flights. Southwest Airlines is an exception – it does not impose any fuel surcharges. Other airlines may choose not to impose fuel surcharges on routes that are highly competitive with Southwest. In the past, many airlines imposed fuel surcharges on travel booked with frequent flyer miles. However, with the recent decline in oil prices, most airline companies have discontinued this practice on domestic award travel.

Trucking & Cargo

Similar to package and freight shipping, cargo and trucking businesses pass along extraordinary fuel costs associated with the transportation of goods to customers through a fuel surcharge. The typical fuel surcharge mechanism bases the surcharge amount on a published fuel price index and increases when the price per gallon of the index increases above a set trigger price per gallon. Most companies index fuel surcharges against the NADF published by DOE.

**Exhibit B-2
Summary of Fuel Surcharges**

	Type of Surcharge	Price Index Basis	Trigger Mechanism	Frequency of Adjustments
Ferry Operators				
BC Ferries	Percentage surcharge imposed on top of base fare.	Not index-based	When the month-end deferral account balance exceeds 2% of annual pre-surcharge tariff revenue	Quarterly
Long Island Ferry (Cross Sound Ferry)	2% fixed surcharge above base fare to cover EPA mandated use of low-sulfur diesel; floating surcharge based on the present price of fuel in comparison to a pre-established benchmark price.	Not index-based	When the monthly price for fuel exceeds the benchmark price. Shares a portion of fuel cost burden with customers.	Monthly
State of Rhode Island Fast Ferry (Block Island Ferry)	Floating surcharge, determined monthly by Rhode Island Utilities Commission. Amount is added to base fares	Not index-based	\$1.20 per gallon	Monthly
Other Public Transit				
Utah Transit Authority	Tiered amount added to base fares	National U.S. Avg On Highway Diesel Fuel Prices (NADF) reported by U.S. Dept. of Energy (DOE)	\$0.25 surcharge is imposed for each \$1.00 increment above \$3.00.	Quarterly
Package/Freight Shipping				
Ground (FedEx & UPS)	Percentage surcharge imposed on top of shipping rates.	NADF	0.50% surcharge is imposed for each \$0.08 increment above \$1.50.	Surcharge can change without notice
Air; International (FedEx, UPS, DHL)	Percentage surcharge imposed on top of shipping rates.	U.S. Gulf Coast (USGC) Prices for kerosene-type jet fuel reported by U.S. DOE	0.50% surcharge is imposed for each \$0.04 increment above \$1.30.	Surcharge can change without notice
Airlines				
Domestic	Methods can vary; Can depend on how competitive routes are; usually charged on a fixed price per passenger basis	Not available	Not available	Surcharge can change without notice
International	Methods can vary typically a fixed charge based on route; Surcharges can be determined illegal by governmental aviation authority.	Not available	Not available	Surcharge can change without notice
Trucking & Cargo				
Trucking	Methods vary; some impose a percentage surcharge imposed to base trucking charges; some utilize a per-mile surcharge.	Most utilize NADF	Varies by company	Surcharge can change without notice
Cargo	Per kilogram surcharge is applied to cargo prices	USGC kerosene-type jet fuel; Local price index such as Platt's Los Angeles Mean fuel index (used by Alaska Air)	Varies by company	Surcharge can change without notice

Source: BERK 2008

APPENDIX C: OPTIONS EVALUATED

Fuel charge set to recover 100% of fuel cost

This option would designate a portion of fares paid by all ferry riders to recover 100% of fuel costs. The fuel charge component of fares would initially be set at the beginning of each budget cycle and would be periodically adjusted between budgets based on the movement of fuel prices.

Advantages:

- Users of the system would each pay for their fair share of fuel costs.
- WSF's exposure to fuel price volatility is virtually eliminated.

Disadvantages:

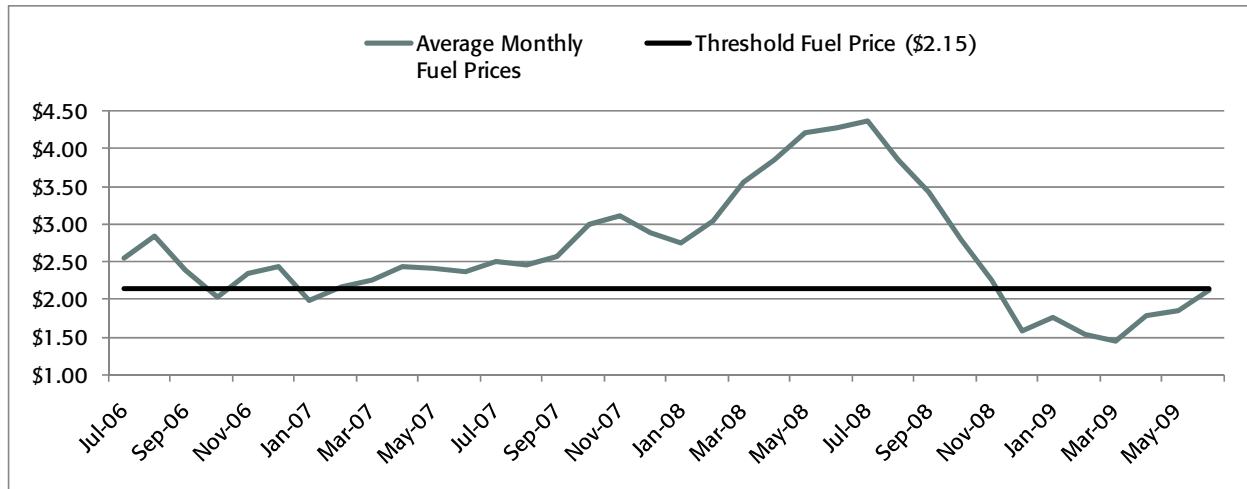
- Large initial fare increases would be necessary in order to "catch-up" fares so that fuel costs are fully recovered. However, a phased-in approach would allow fares to be gradually increased in order to work up to the 100% fuel cost recovery goal. Fare increases needed to achieve 100% fuel cost recovery may not be achievable due to ridership impacts and would not be the preferred option for WSF.
- Fuel component of fare would be increased and decreased relative to the market price swings and consumers may get wary of large fare shifts. Further, there is no discretion allowed to budget makers or the Department regarding how to fund fuel costs, particularly in a situation where there may be a significant increase in prices over a very short period of time.

Fuel surcharge set to kick in once base fuel is triggered

In this option, WSF would cover fuel costs equivalent to consumption multiplied by a set base fuel price per gallon from base fare revenues and taxes. As fuel prices rise above this threshold price, the additional fuel costs would be passed on to customers and recovered through a fuel surcharge. The surcharge would remain in place until fuel prices fell below the base fuel price. Similar to the shipping industry, fuel prices would be based on a published diesel index (e.g. NADF published by DOE) and a standard table of surcharges would establish fuel price thresholds and surcharge amounts. To account for inflation, the base fuel price per gallon could be adjusted annually by an index such as the Consumer Price Index for all urban consumers (CPI-u).

An example of how this surcharge would work based on actual average fuel prices between FY 2006 and FY 2009 is displayed below in **Exhibit C-1**. The base fuel price of \$2.15 is assumed to be equal to the historical average price per gallon of diesel fuel between 1952 and 2008, adjusted for inflation. As illustrated in **Exhibit C-1**, a fuel surcharge would be imposed for most of FY 2007, all of FY 2008, and would cease about half way through FY 2009.

Exhibit C-1
Example of Fuel Surcharge Using FY 2007 - FY 2009 Monthly Average Fuel Prices



Source: WSF, 2009

Exhibit C-2 illustrates how a shipping industry-type fuel surcharge mechanism would be applied using \$2.15 as the base fuel price. At the beginning of the FY 2009-11 Budget, the estimated average price per gallon for diesel was \$2.36. This represented a \$13.7 million increase in estimated fuel costs compared to the total FY 2009-11 appropriation. Using the standard table of surcharges below, the average price of \$2.36 would result in a 4.86% surcharge applied to base fares. The resulting surcharge would decrease overall ridership by almost 2% or more than 400,000 riders. The upper bound of the standard table below is capped at \$5.00 per gallon, which would result in 18.9% drop in total ridership. This upper bound can be adjusted so that the overall ridership impact is less severe. For example while fuel prices were rising into the \$4.00 per gallon range in FY 2008, WSF could set the upper bound of the table to \$2.90 per gallon. The fuel surcharge would never rise above 13.28% and the resulting ridership loss would never be above 4.77%.

Exhibit C-2
Example of Standard Table of Surcharges & Ridership Impact FY 2009 - FY 2011

At Least:	But Less Than:	Surcharge:	FY 2011 Ridership Impact	% Change from Base Ridership
\$0.00	\$2.15	0.00%	23,450,000	0.00%
\$2.16	\$2.30	2.05%	23,277,781	-0.73%
\$2.31	\$2.45	4.86%	23,040,970	-1.74%
\$2.46	\$2.60	7.66%	22,804,159	-2.75%
\$2.61	\$2.75	10.47%	22,567,348	-3.76%
\$2.76	\$2.90	13.28%	22,330,537	-4.77%
\$2.91	\$3.05	16.08%	22,093,727	-5.78%
\$3.06	\$3.20	18.89%	21,856,916	-6.79%
\$3.21	\$3.35	21.69%	21,620,105	-7.80%
\$3.36	\$3.50	24.50%	21,383,294	-8.81%
\$3.51	\$3.65	27.30%	21,146,483	-9.82%
\$3.66	\$3.80	30.11%	20,909,673	-10.83%
\$3.81	\$3.95	32.92%	20,672,862	-11.84%
\$3.96	\$4.10	35.72%	20,436,051	-12.85%
\$4.11	\$4.25	38.53%	20,199,240	-13.86%
\$4.26	\$4.40	41.33%	19,962,429	-14.87%
\$4.41	\$4.55	44.14%	19,725,619	-15.88%
\$4.56	\$4.70	46.95%	19,488,808	-16.89%
\$4.71	\$4.85	49.75%	19,251,997	-17.90%
\$4.86	\$5.00	52.56%	19,015,186	-18.91%

FY 09 - 11 Fuel Budget

Total Appropriation	\$53,110,560
"Base" Budget @ \$2.15ppg	\$66,802,523
Budget Surcharge Amount	(\$13,691,963)

* Average cost per gallon for FY 09-11 is \$2.36, resulting in a 4.86% fuel surcharge.

Source: Parsons Brinckerhoff, WSF Revenue Projections for Fuel Surcharge Options

Advantages:

- Eliminates exposure to short-term price fluctuations above the established base fuel price.
- Fuel costs are shared between customers and WSF.

Disadvantages:

- Fuel surcharges may need frequent adjustments in periods where fuel prices rise and fall rapidly. Fares would be increased and decreased relative to the market price swings and consumers may get wary of large fare shifts.
- Addresses fuel price volatility, but setting the base at \$2.15 per gallon does not solve structural problem of higher fuel prices relative to historical prices.

Fuel Surcharge based on a “traditional share of costs” approach

Similar to the previous surcharge option, fuel costs in this option are shared between WSF and the customer. Base fuel expenditures are set to what has been the traditional share of total operating

expenditures; historically this has been at about 10%. Any fuel costs over this amount would be recovered through a surcharge.

Advantages:

- Eliminates exposure to short-term price fluctuations and long-term structural change in fuel costs.

Disadvantages:

- This option addresses both the structural change in fuel cost and price volatility, but assuming that fuel costs never return to the traditional share of costs, fuel surcharge will always be imposed. Setting WSF's share of fuel expenditures closer to what current expenditures are relative to total operating costs (e.g. 15%-18%), would reduce the likelihood of a permanent fuel surcharge.

Fuel Surcharge tied to budgeted fuel costs

In this option, WSF would have in place an established fuel budget base target and the fuel surcharge would be imposed only if short-term fuel costs exceeded this budget base amount. This short-term mitigation strategy could be adjusted or eliminated each time a new budget is adopted, effectively establishing a new base. Fuel surcharges would be imposed as a percentage above base fares needed to recover the additional fuel expenditures.

Advantages:

- Allows WSF and Legislature the flexibility of resetting base fuel expenditures each budget cycle to accurately reflect the structural change in fuel expenditures, thus eliminating the need for a fuel surcharge.
- Eliminates exposure to short-term price fluctuations and long-term structural change in fuel costs.

Disadvantages:

- May require additional state support to fund the base fuel amount.

Fuel Stabilization Fund

For any option listed above, a fuel stabilization fund could be implemented as a complementary measure to further mitigate possible rapid fluctuations in price. The fund would eliminate the need for large fare increases to offset sharp increases in fuel costs by transferring money from the stabilization fund to the WSF operating account. Fuel surcharges would be imposed to replenish the fund. The fund would initially be funded through taxes or additional state support. This fund could be structured similarly to the BC Ferries model and could work with or without a comprehensive hedging strategy to assist in managing price volatility.