

REPORT TO THE LEGISLATURE
on
Diesel Fuel Price Hedging, Fiscal Year 2017

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
FERRIES DIVISION

January 2018



Executive Summary

In 2011, the Washington State Legislature authorized the Washington State Department of Transportation (WSDOT) to enter into a distributor-controlled fuel hedging program. The objectives of this program are to decrease the volatility of fuel costs and increase the likelihood that actual net fuel cost will remain below the budgeted amount, with immediate cost savings being secondary to managing the overall price risk. The first distributor-controlled hedges¹ were executed in fiscal year 2012. In 2012, the Legislature expanded the authorization to include other methods of hedging approved by the fuel hedging committee. The first financial hedges² were executed in fiscal year 2015.

During fiscal year 2017, the fuel hedging program continued to accomplish its goal of decreased volatility of fuel costs. For fiscal year 2017, the amount hedged totaled 15,288,000 gallons – or 84 percent of budgeted gallons. Although hedging had the effect of increasing the price for hedged gallons in fiscal year 2017 by an average of 25 cents compared to fiscal year 2017 actuals, hedges were an average of 60 cents lower compared to the price forecast at the time the hedges were executed.

In a market where prices were declining, during 2015-17, the department entered into hedges below forecast. Subsequently, market prices dropped further.

For the 2017-19 biennium, hedges are in place for both fiscal years at a combined price below the 2017 enacted fuel budget. Consistent within the limits of fuel hedging policy, hedges have been executed for the 2017-19 biennium for 76 percent of forecasted consumption in fiscal year 2018 and 49 percent of forecasted consumption in fiscal year 2019.

Fuel Hedging in Fiscal Year 2017

During fiscal year 2017, WSDOT ferries division continued a hedging program for the purpose of stabilizing fuel expense³. The statutory authority to conduct hedging is provided in RCW 47.60.830.

The Secretary of Transportation's Executive Order 1078 provides specific direction for implementing a hedging program⁴. The Executive Order established a Fuel Hedging Oversight Committee to provide guidance; provides for the use of a hedging consultant to advise on the timing, quantities, and tenure of hedge contracts; sets maximum hedging limits; and outlines other operating parameters. The Fuel Hedging Oversight Committee consists of the WSDOT Chief Financial Officer, the Assistant Secretary for the Washington State Ferries (WSF), and a transportation Budget Assistant to the Governor from the Office of Financial Management. The committee meets to receive periodic updates on the status of the market, hedges in place, and future hedging plans, or when a need arises to make a policy decision or to set parameters for the program. The committee is staffed by the Director of Finance and Administration at WSF, and receives advisory input from a hedging consultant.

¹ Distributor-controlled hedges make use of price contracts with fuel distributors for quantities of fuel to be delivered at fixed times.

² With financial hedges, the department enters into futures contracts directly, guaranteeing the fuel price in the financial market at a set date in the future. For both distributor-controlled and financial hedges, WSF retains the services of a Fuel Hedging Program Advisor by way of a consultant contract.

³ Please see Attachment A for specifics of each hedge contract entered into for fiscal year 2017.

⁴ Please see Attachment B for the full executive order.

The hedging policy sets forth limitations within which hedges will be executed in terms of maximum quantities, length of contracts, administrative structure, and consultant assistance. The policy states that the purpose of the hedging program is to seek to decrease the volatility of fuel cost and increase the likelihood that actual net fuel cost will remain below the budgeted cost. The Executive Order establishing the policy was changed in August 2014 to authorize hedge contracts at the discretion of the Assistant Secretary for Ferries, provided that the quantities and length of contract were within limits of the “standard recommendation,” which can change by action of the committee. In January 2017, it was changed again to remove this authorization for “standard recommendation.” The limits established by the Executive Order as of January 6, 2017 were:

Amount Hedged:

- Up to the first twelve months, on a rolling basis, a maximum of 95 percent of the forecasted consumption may be hedged. In addition, hedges will not exceed the forecasted monthly consumption level for any specific month.
- Between the thirteenth and twenty-fourth months, on a rolling basis, the volume of fuel hedged will not exceed 80 percent.
- In times of extraordinary circumstances, the Oversight Committee may decide to hedge fuel in the twenty-fifth month and beyond, at a maximum ratio to be determined at that time by the committee.
- The Oversight Committee may set lower limits, including in consideration of potential service reductions.

Duration:

- The maximum maturity of any contracts entered into under the standard recommendation is twenty-four months. Contract terms may cross biennial lines.
- If extraordinary circumstances warrant longer maximum maturity periods, the Oversight Committee may approve hedges that extend the maximum maturity beyond twenty-four months on a case-by-case basis.

For fiscal year 2017, hedges were executed using financial contracts whereby WSF agrees to pay a fixed dollar amount for a certain volume of fuel and, in return, receives a variable dollar amount based on a fluctuating index that is highly correlated with the price WSF pays to its fuel supplier. Financial contracts are the structure used for hedging by many transit agencies or other government entities. By hedging in this manner, the price for hedging fuel is lower than the price for an identical hedge with the supplier. WSF takes some price risk because the index is not perfectly correlated with the price.

For fiscal year 2017, hedged fuel totaled 15.3 million gallons, or 84 percent of budgeted gallons, at an average price of \$2.23 per gallon. Currently, there are hedges in place for fiscal year 2018 for 14.2 million gallons, or approximately 76 percent of projected consumption at an average price of \$1.79 per gallon. There are hedges in place for fiscal year 2019 for 9.1 million gallons, or approximately 49 percent of projected consumption at an average price of \$1.81 per gallon. There are currently no hedges in place for fiscal year 2020 or beyond. Figures 1 and 2 show fiscal years 2017, 2018, and 2019 hedged gallons compared to total budgeted consumption.

Figure 1

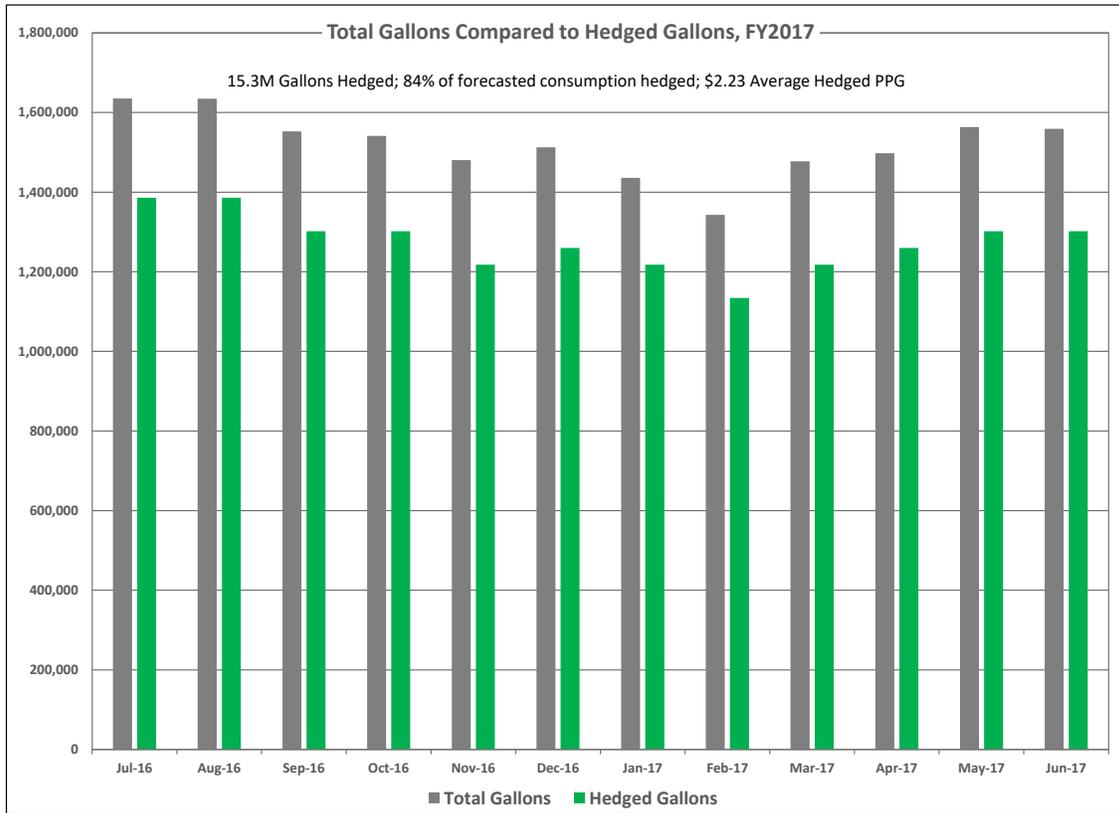
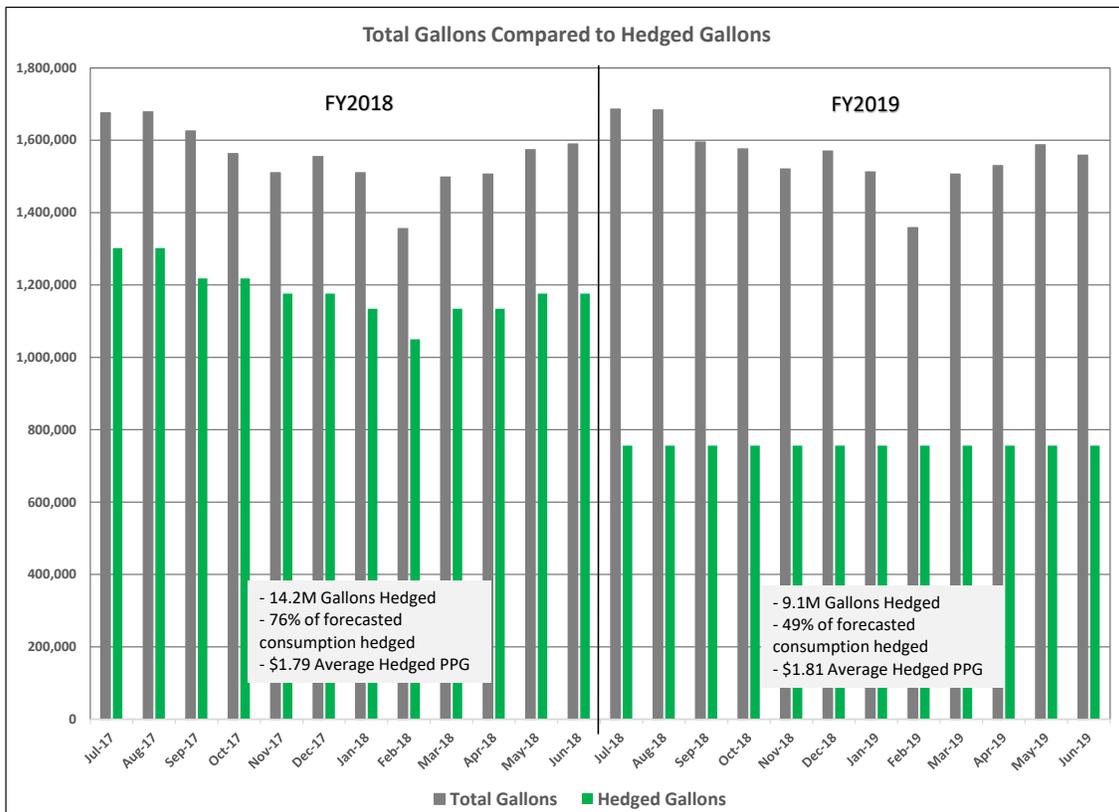


Figure 2



Note: In fiscal year 2017 and fiscal year 2018, some hedges the department entered into comprised a variable number of gallons per month.

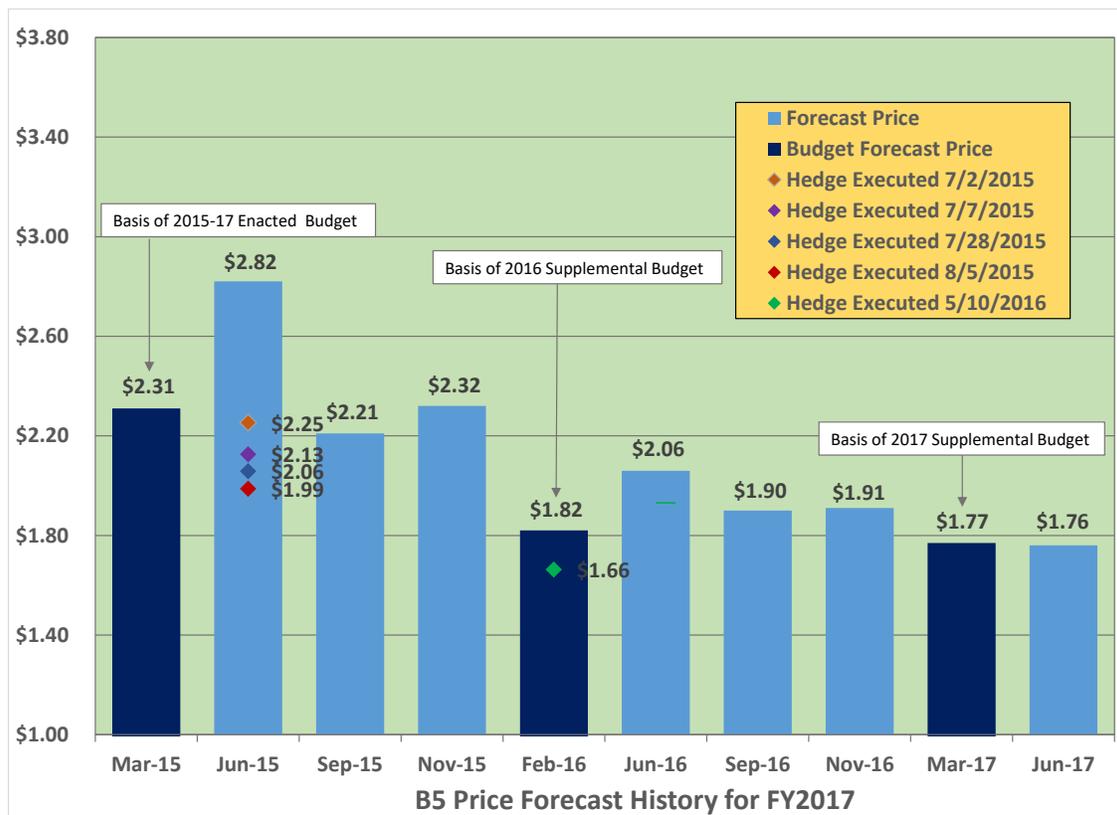
Although hedging had the effect of increasing the price for hedged gallons in fiscal year 2017 by an average of 25 cents compared to fiscal year 2017 actuals, they were 60 cents lower compared to the price forecast at the time the hedges were executed. Forecasts were lower for the hedge period after the hedges were executed. The revised forecasts, which were lower than the executed hedges, and the hedge prices were used to size the 2015-17 budgets. For fiscal year 2018, the average hedge price is \$1.79 per gallon, which is three cents lower than the adopted budget and five cents below the June 2017 forecast. Figure 3 below shows the hedge prices compared to the price forecasts at the time the hedges were put in place.

Hedges vs. Forecasts

In Figure 3, the 2017 quarterly price forecasts are represented by the bars. The diamond shaped markers are the prices at which hedges were executed. All the hedges were below the budget forecast at the time they were executed.

At the time the first hedge for fiscal year 2017 was executed, the price forecast was \$2.82 per gallon; the hedged price was \$2.25 per gallon. The forecast later dropped further to as low as \$1.76 per gallon. During a biennium where forecast-to-forecast price adjustments are declining sharply, hedges which were originally locked in below forecast, do achieve the program goal of price and budget stability. However, as subsequent forecasts continue to decline, the hedged price can be higher than subsequent forecasts or spot prices.

Figure 3

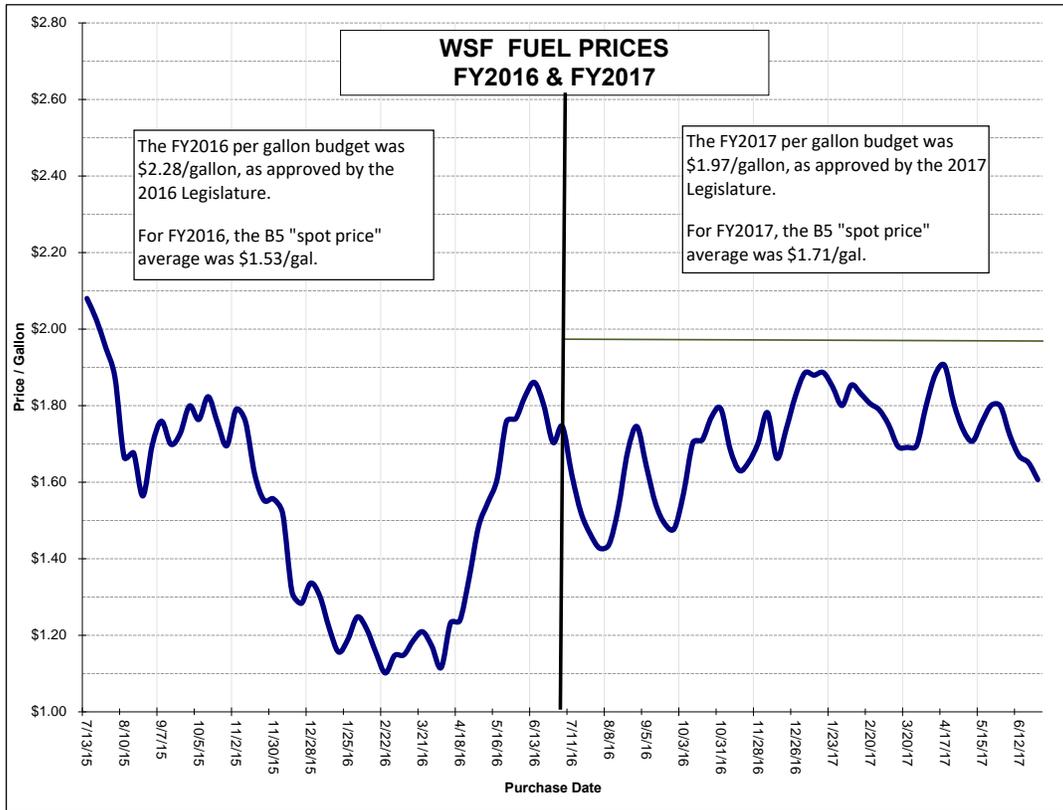


As opportunities arise, the department will execute future hedges in accordance with statute and the executive order.

Price History, Fiscal Year 2017

Price volatility in fiscal year 2016 has stabilized comparatively in fiscal year 2017. Prices through June 30, 2017, are shown in Figure 4.

Figure 4



Diesel fuel futures prices for fiscal year 2017 increased by \$0.16 per gallon on average vs. fiscal year 2016 and remained relatively steady and within a price range during fiscal year 2017. The global imbalance of supply and demand ended during fiscal year 2017. During fiscal year 2016, there was an average daily global surplus of oil of 960,000 barrels, whereas in fiscal year 2017 there was an average daily global deficit of 100,000 barrels. This return to balance is the main reason for higher prices year over year. Average U.S. daily domestic oil production decreased from 9.11 million barrels per day during fiscal year 2016 to 8.86 million barrels per day during fiscal year 2017. This decrease in U.S. production accounted for 24 percent of the change in the global balance of supply and demand. Comparing the same time periods, OPEC production increased by 0.51 million barrels per day. This year over year increase in OPEC production (that is less costly to produce) is one of the main reasons that prices remained relatively low year over year. In response to higher prices, evenly balanced supply and demand, and the expectation of growing demand, U.S. domestic crude oil producers sought to increase production by increasing the number of operating oil rigs that are drilling new oil wells from an average of 502 in fiscal year 2016 to an average of 540 in fiscal year 2017.

In addition to basic supply and demand fundamentals, there are other factors that have contributed to the volatility of the price of petroleum such as speculation, foreign political instability, the strength of the domestic and foreign economies, and the value of the U.S. dollar. The structure of the department's executive order and associated limitations allow for continued efforts to achieve budget stability within a constrained format.

Hedge Effectiveness Test

The hedge effectiveness is established by Government Accounting Standards Board Statement No. 53 (GASB 53) and serves to ensure that the hedging activity of a governmental or public entity is producing the desired effect which, in this case, is to offset increases and decreases in diesel fuel costs in order to make future diesel costs more certain and manage fuel budget risk. The effectiveness test requires the hedging instrument index, in this case diesel fuel futures, to exhibit a minimum level of statistical relationship to WSF's fuel cost in terms of correlation, regression slope, and F-Statistic confidence and is typically performed using 36 months of historical data on WSF fuel cost per gallon and the hedging index price.

Although the regression analysis for the hedge effectiveness test is prepared by the hedging consultant, the department ensures that the results fall within the acceptable categories of an effective hedge.

The test is performed to ensure that the hedge is operating and performing as expected and desired. Generally speaking, the test is to answer the question, "is the hedge doing what it should be doing and what it was expected to do?" If the test determines that the hedge is effective, the department can include the results of the hedging activity on its income statement as an element of cost of the hedged item, in this case diesel fuel. When the hedge is effective and there are hedge gains, this is accounted for as a negative fuel cost. When there are hedge losses, positive fuel cost. If there were a situation where the hedge were determined to be not effective, then, according to GASB 53, the financial effects of the hedge could not be included in the income statement and would have to be accounted for as a change in asset value on the balance sheet. This is an extremely remote possibility for WSF.

The hedge effectiveness test is performed quarterly, and is included in annual financial statements.

Hedge effectiveness analysis for the three years ending June 30, 2017, has proven that the department's hedges fall within the acceptable tolerance level. The data analyzed included the various rack prices weighted according to WSF consumption (without the multiplier), and diesel futures prices, which is the index upon which WSF hedges are based.

The WSF statistical results, compared to GASB 53 rules:

- The R-squared statistic must be greater than 0.8000 and the WSF result is 0.9553.
- The regression slope must be between -0.80 and -1.25 and the WSF result is -1.0375.
- The F-statistic must be significant within a 95 percent confidence interval, which it is.

With these statistical tests, WSF hedging is effective, according to GASB 53 rules.

The current five-year average differential to futures (fiscal year 2012 – fiscal year 2017) is now \$0.1340 per gallon, compared to the previous five-year differential (fiscal year 2011 – fiscal year 2016) of \$0.1291.

Fiscal Year 2017 Hedge Contracts

Hedge #8				Hedge #10				Hedge #12			
Executed 7/2/2015				Executed 7/7/2015				Executed 7/28/2015			
FY2017				FY2017				FY2017			
	Gallons	Price	W fees&diff	Gallons	Price	W fees&diff	Gallons	Price	W fees&diff		
07/01/16	252,000	1.9636	2.21013	252,000	1.8314	2.0770	252,000	1.74678	1.9920		
08/01/16	252,000	1.9752	2.22173	252,000	1.8437	2.0893	252,000	1.76293	2.0081		
09/01/16	252,000	1.9879	2.23443	252,000	1.85	2.0956	252,000	1.77959	2.0248		
10/01/16	252,000	1.9997	2.24623	252,000	1.8689	2.1145	252,000	1.79425	2.0394		
11/01/16	252,000	2.0123	2.25883	252,000	1.88	2.1256	252,000	1.80801	2.0532		
12/01/16	252,000	2.0235	2.27003	252,000	1.89	2.1356	252,000	1.82379	2.0690		
01/01/17	252,000	2.0285	2.27503	252,000	1.9	2.1456	252,000	1.83389	2.0791		
02/01/17	252,000	2.0241	2.27063	252,000	1.9	2.1456	252,000	1.83615	2.0813		
03/01/17	252,000	2.0152	2.26173	252,000	1.9	2.1456	252,000	1.83203	2.0772		
04/01/17	252,000	2.0133	2.25983	252,000	1.892	2.1376	252,000	1.83782	2.0830		
05/01/17	252,000	2.0119	2.25843	252,000	1.8995	2.1451	252,000	1.84239	2.0876		
06/01/17	252,000	2.0164	2.26293	252,000	1.9045	2.1501	252,000	1.85237	2.0975		
	<u>3,024,000</u>			<u>3,024,000</u>			<u>3,024,000</u>				
	Average	\$2.0060	\$2.2525	Average	\$1.8800	\$2.1256	Average	\$1.8125	\$2.0577		

Hedge #13				Hedge #16			
Executed 8/5/2015				Executed 5/10/2016			
FY2017				FY2017			
	Gallons	Price	W fees&diff	Gallons	Price	W fees&diff	
07/01/16	252,000	1.679	1.9237	378,000	1.4204	1.6628	
08/01/16	252,000	1.679	1.9237	378,000	1.4204	1.6628	
09/01/16	252,000	1.7138	1.9585	294,000	1.4204	1.6628	
10/01/16	252,000	1.7281	1.9728	294,000	1.4204	1.6628	
11/01/16	252,000	1.7418	1.9865	210,000	1.4204	1.6628	
12/01/16	252,000	1.7560	2.0007	252,000	1.4204	1.6628	
01/01/17	252,000	1.7637	2.0084	210,000	1.4204	1.6628	
02/01/17	252,000	1.7659	2.0106	126,000	1.4204	1.6628	
03/01/17	252,000	1.7618	2.0065	210,000	1.4204	1.6628	
04/01/17	252,000	1.7678	2.0125	252,000	1.4204	1.6628	
05/01/17	252,000	1.7738	2.0185	294,000	1.4204	1.6628	
06/01/17	252,000	1.7853	2.0300	294,000	1.4204	1.6628	
	<u>3,024,000</u>			<u>3,192,000</u>			
	Average	\$1.7430	\$1.9877	Average	\$1.4204	\$1.6628	

Note: All hedges for fiscal year 2017 were executed in fiscal year 2016.

The hedge price reflected in the fuel cost estimates for WSF reflect the cost of the hedge with fees and differential. The differential is the average amount we expect to pay because it's an adjustment for Tacoma and Anacortes instead of New York Harbor, and makes the advantage of the hedge formula closer to the amount we would pay the vendor.



Signature on file

Roger Millar, PE, AICP
Secretary of Transportation

January 6, 2017

Date

Fuel Hedging Program

I. Introduction

A. Purpose

This Secretary's Executive Order informs employees how to administer fuel hedging in the Ferries Division.

B. Background

In 2011 the Washington State Legislature authorized the Washington State Department of Transportation (WSDOT) to enter into a distributor-controlled fuel hedging program for the biennium of 2011-13. In 2012 the Legislature expanded this authorization to include other methods of hedging approved by the fuel hedging committee. The department is required to consult with the Department of Enterprise Services' Master Contracts and Consulting Program on strategies to reduce the overall cost of fuel and mitigate the impact of market fluctuations and pressure on short-term and long-term fuel costs to the Ferries Division.

C. Definitions

Forward Pricing Period – The term of any fuel hedging contract.

Fuel Hedging – A contractual tool used to reduce exposure to volatile and potentially rising fuel costs. Fuel hedging results in price stability, not necessarily budget savings.

Fuel Hedging Program – The fuel price risk management program.

Hedge Ratio – The ratio of hedged fuel compared to total fuel purchases projected for a certain period of time.

Maximum Maturity – The maximum length of time that a fuel price contract may be extended.

D. Supersession

This Secretary's Executive Order supersedes and replaces the prior version with the same title dated January 14, 2016. All references to the superseded E 1078.05 now reference E 1078.06.

E. What Has Changed

- Language was added to subsection III.B. to allow Fuel Hedging Oversight Committee members to appoint a designee to receive recommendations and take action on potential hedges in their absence.
- The Standard Recommendation and Appendix A and all of their references have been removed.

II. Secretary's Executive Order

The Assistant Secretary for the Ferries Division or designee is directed to establish and maintain a fuel hedging program with the primary purpose of managing price risk on fuel used by the Ferries Division. The fuel hedging program will be carried out by the Ferries Division, executing the appropriate transactions at the appropriate times and prices to create the desired effect within policy constraints.

The objectives of the fuel hedging program are to:

- Decrease the volatility of fuel cost.
- Increase the likelihood that actual net fuel cost will remain below the budgeted cost.

Immediate cost savings is secondary to managing overall price risk.

Specific fuel hedging program strategies may include:

- Entering into financial contracts with hedge providers for specific quantities of fuel at specific times, using a specific index.
- Using price contracts with fuel distributors for quantities to be delivered at fixed times.
- Mitigating transaction timing risk by making numerous small volume transactions as opposed to large transactions at a single point in time.
- Continually monitoring the market and assessing program effectiveness.
- Addressing market opportunities and market risks based upon budget goals.

III. Policy

A. Program Administered by Ferries Division

The Assistant Secretary for the Ferries Division is responsible for administration of the fuel hedging program. The Assistant Secretary or designee may enter into hedge contracts that meet the Oversight Committee's approval.

B. Fuel Hedging Oversight Committee

The Fuel Hedging Oversight Committee shall meet at least quarterly, and includes the Assistant Secretary for the Ferries Division, the Chief Financial Officer, and a representative from the Office of Financial Management (OFM).

The committee provides recommendations to the Assistant Secretary for the Ferries Division regarding hedge contracts. The committee reviews reports from Ferries Division staff and directs Ferries Division staff to provide information on program operations.

Ferries Division staff coordinates times, locations, and agendas for the committee. The committee reviews performance reports and policy and strategy recommendations from Ferries Division staff. The committee directs Ferries Division staff to provide additional information on program operations.

Hedge committee members may each appoint a designee to receive recommendations and take action on potential hedges in their absence.

C. Fuel Hedging Program Advisor (Consultant)

The Fuel Hedging Program Advisor is selected by the department through a competitive process and will:

- Provide contracted services for a time period established by the department.
- Recommend an execution strategy.
- Generate monthly reports on the program's status and results.
- Monitor the program and energy markets.

The costs associated with the program advisor consultant position will be budgeted and accounted for separately from fuel purchases, but will be considered as part of Ferries Division's fuel budget.

D. Qualified Independent Representative

The Assistant Secretary for the Ferries Division or designee will designate one or more persons or entities that represent or otherwise demonstrate that they meet the requirements of a qualified independent representative as set forth in Title 17 Code of Federal Regulations (CFR) [§23.450\(b\)\(1\)](#) adopted by the Commodity Futures Trading Commission (CFTC) under the Dodd-Frank Wall Street Reform and Consumer Protection Act. Ferries Division staff will review at the time of each fuel hedge transaction whether the persons or entities continue to represent or otherwise demonstrate that they meet these requirements. These requirements may be satisfied through representations or other evidence that the qualified independent representative (which may be the Fuel Hedging Advisor to the extent the Fuel Hedging Program Advisor provides these representations or other evidence):

- Has undertaken a duty to act in the best interests of the Ferries Division.
- Has sufficient knowledge and capability to independently evaluate Fuel Hedging.
- Has appropriate risk management and valuation policies and procedures under which the representative evaluates risks with regard to the relevant trade or

trading strategy involving Fuel Hedging and the fair pricing and appropriateness of Fuel Hedging transactions.

- Has conflict of interest policies and procedures reasonably designed to manage and mitigate material conflicts of interest.
- Provides appropriate and timely disclosures to the Ferries Division, including disclosure of all material conflicts of interest that could reasonably affect the judgment or decision-making of the representative with respect to its obligations to the Ferries Division.
- Is independent of counterparties to Fuel Hedging transactions, and agrees to comply with restrictions on political contributions (if and when imposed by the CFTC).

E. Maximum Hedge Ratio

Ferries Division fuel consumption is highly predictable and without significant variability over time within a given service, schedule, and fleet. Given this predictability, the maximum hedge ratio will be:

- Up to the first twelve months, on a rolling basis, a maximum of 95 percent of the forecasted consumption may be hedged. In addition, hedges will not exceed the forecasted monthly consumption level for any specific month.
- Between the thirteenth and twenty-fourth months, on a rolling basis, the volume of fuel hedged will not exceed 80 percent.
- In times of extraordinary circumstances, the Oversight Committee may decide to hedge fuel in the twenty-fifth month and beyond, at a maximum ratio to be determined at that time by the committee.
- The Oversight Committee may set lower limits, including in consideration of potential service reductions.

F. Biodiesel Hedging

Hedge ratios may be adjusted if Ferries Division's planned percentage of biodiesel changes significantly from a level of five percent, or if the price correlation between diesel and biodiesel diverges more than five percent from its historical average.

G. Maximum Maturity

To allow the establishment of cost certainty in current and future budget periods, the maximum maturity of any contracts entered into in conjunction with the program is twenty-four months. If extraordinary circumstances warrant longer maximum maturity periods, the Oversight Committee may approve hedges that extend the maximum maturity beyond twenty-four months on a case-by-case basis. Contract terms may cross biennial lines.

H. Physical Fuel Supply

The physical supply of fuel will continue according to the current process of Ferries Division under the Department of Enterprise Services contract. The physical supply price is based on the Oil Price Information Service (OPIS) index

for ultra-low sulfur diesel for Tacoma and Anacortes, with taxes and other costs determined by the supply contract.

I. Reporting Responsibilities

1. Ferries Division staff, along with the Program Advisor, will:
 - a. Generate for the Assistant Secretary for the Ferries Division semiannual updates on the status and results of the Program. These updates will include:
 - The cost of fuel as delivered by the fuel supplier compared to prices that would have been available on the spot market.
 - Year to date and biennium to date performance of fuel expenses relative to the budget (including hedged purchases).
 - Any recommendations for changes in policy or strategy. These will also be reported by the Assistant Secretary for the Ferries Division to the Deputy Secretary for concurrence.
 - b. Compile annual reports. Periodic reports are required per Revised Code of Washington ([RCW](#) 47.60.830). The reports will be distributed to the Oversight Committee prior to submittal to the state legislature and the Department of Enterprise Services.
 - c. Generate for the Fuel Hedging Oversight Committee quarterly updates on the status and results of the Program. These updates will include:
 - Details of hedge contracts entered into to include the transaction amount, gallons hedged, transaction price per gallon, variance between transaction price per gallon and budgeted price per gallon, and variance between transaction amount and budgeted amount.
 - Comparison of projected fuel usage and actual fuel usage in gallons.
 - Current energy market conditions.
2. Accounting and Financial Services Division staff will:
 - a. Review the accounting and financial reporting for derivative instruments for compliance with Governmental Accounting Standards Board (GASB) standards.
 - b. Make appropriate entries to record deferred inflows and outflows of resources related to financial contracts.
 - c. Prepare notes to the Comprehensive Annual Financial Report (CAFR) for financial hedging contracts as required by GASB 53.

Contact for More Information

For more information on the Fuel Hedging Program, please contact the Director of Finance and Administration of the Ferries Division at 206-515-3403.

References

- [17 CFR §23.450\(b\)\(1\)](#) *Requirements for swap dealers and major swap participants acting as counterparties to Special Entities*
- [RCW 47.60.830](#) *Ferry system operation — Fuel purchasing strategies — Report*

Review and Update Requirements

When changes are necessary to update this document, inform the Chief Financial Officer. The Chief Financial Officer periodically reviews this document and proposes updates to the Secretary of Transportation for approval.

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