



**Massachusetts Bay  
Transportation Authority**

# Fuel Hedge

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Fiscal and Management Control Board

June 22, 2020

Patrick Landers

# Diesel Fuel Hedge Background

- MBTA has historically hedged the costs of its diesel fuel to minimize expenditure volatility and to provide greater certainty in budgeting.
- Since 2001, the hedging of fuel costs has been through the use of derivative contracts rather than a cap within the vendor contract.
- To diversify risk among counterparties and ensure competitive bids, the MBTA put in place a master hedge for specific amounts and terms.

Past counterparties include

JP Morgan  
 Citibank  
 Bank of America – Merrill Lynch  
 Morgan Stanley  
 Goldman Sachs

WHAT A FUEL HEDGE IS	WHAT A FUEL HEDGE IS NOT
<ul style="list-style-type: none"> <li>✓ A method of reducing budgetary uncertainty</li> <li>✓ A tool to protect MBTA finances from fuel price volatility</li> <li>✓ A win-win (<i>If fuel prices go down, we win at the pump. If fuel prices go up, we win on the hedge.</i>)</li> </ul>	<ul style="list-style-type: none"> <li>✗ An opportunity for MBTA to outsmart the market</li> <li>✗ A tool to take advantage of market conditions</li> <li>✗ A gamble with the banks</li> </ul>



# How a Hedge Works

## PHYSICAL DELIVERY



\$2 a gallon  
Price falls to \$1.85



\$0.05 Distribution Cost



\$2.05 a gallon  
Price now \$1.90 (\$0.15 savings)

Price drops \$0.15 at pump

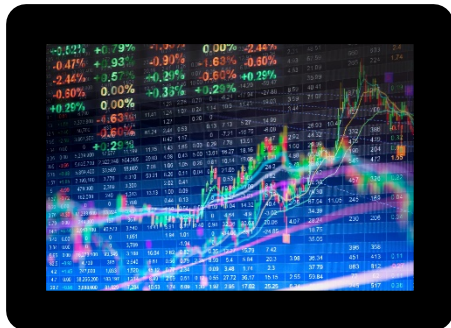


$$-\$0.15 + \$0.15 = \$0$$

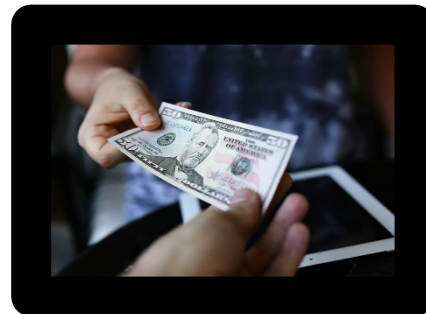


The result of changes in the price of Oil Futures

## HEDGE



Lock in rate at \$2 a gallon



If price goes up, Bank pays MBTA  
If prices go down, MBTA pays Bank



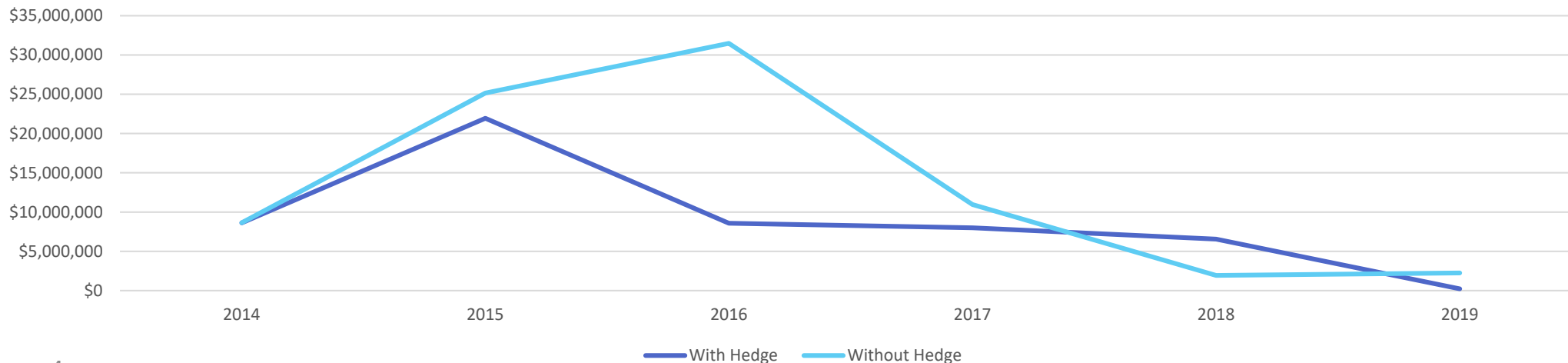
Futures decline to \$1.85 (MBTA pays difference)

# Recent Hedging

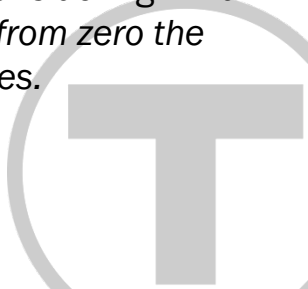
	FY2016	FY2017	FY2018	FY2019	FY2020
<b>Percent hedged</b>	90%	75%	50%	37%	50%
<b>Gallons hedged</b>	18.7 million	15.7 million	10.3 million	8.1 million	8.8 million
<b>Providers</b>	Bank of America, Citi, Morgan Stanley	Citi, JP Morgan	Citi, Morgan Stanley	Goldman	Goldman
<b>Price Per Gallon</b>	\$2.50	\$1.79	\$1.51	\$1.71	\$1.85

- The MBTA hedges its diesel usage every year. The amount hedged varies each year, but the hedge has to be for a specific volume of fuel for a specific term.
- In some years, the MBTA enters into agreements with multiple providers.

Budget Variance (absolute numbers\*)



\*Absolute value describes the distance of a number on the number line from 0 without considering which direction from zero the number lies.

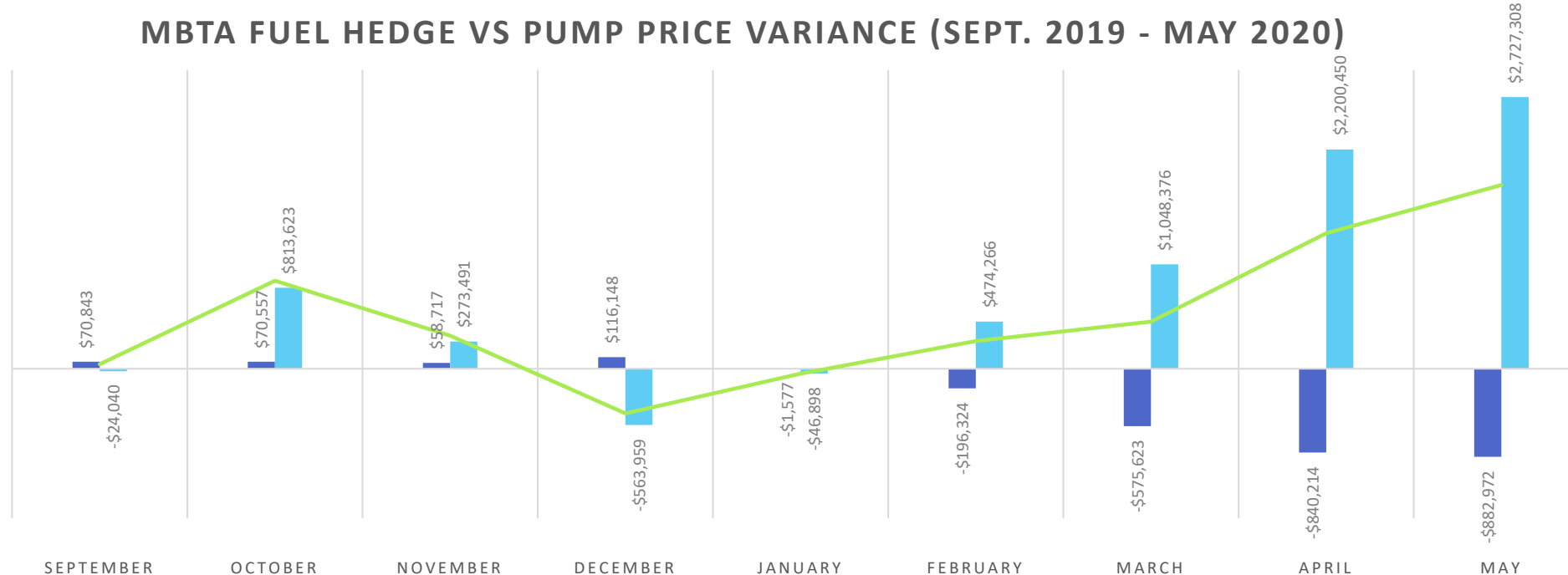


# FY20 Fuel Hedge

- September 2019 through June 2020 fuel hedge contract
- Hedged roughly 50% of projected usage during 8-month period (8.8M Gallons)
- Entered a hedge with Goldman Sachs for \$1.8546 per gallon
- Energy hedge has resulted in a net payments to bank YTD of \$1.3M, made up for by \$1.7M savings in fuel costs (net savings of \$400,000).

## MBTA Fuel Hedge VS Pump Price Variance (Sept. 2019 - May 2020)

MBTA FUEL HEDGE VS PUMP PRICE VARIANCE (SEPT. 2019 - MAY 2020)



Light blue is what was paid at the pump (actual) versus budget  
 Dark blue represents fuel hedge (payments versus receipts)  
 Green line represents what MBTA actually paid on fuel (hedge and pump prices combined)



# Proposed FY21 Fuel Hedge

## Recommendation

- Based on historic usage, the MBTA is budgeting for 21 million gallons in fuel purchases between its commuter rail and bus in FY21.
- The MBTA is proposing to hedge 50% of its budgeted usage (10.67 million gallons).
- Unhedged the MBTA could be exposed to \$12-\$24 million in budgetary volatility based on an analysis of historic price changes
- A 50% hedge performs when price per gallon increases. The 50% unhedged portion performs when price per gallon decreases.
- In this regard, the 50% hedge maintains a neutral position relative to future price increases or decreases
- A 50% hedge would reduce potential budgetary volatility to \$6-\$12 million (one-to-two standard deviations)
- A fuel hedge allows the MBTA to capitalize on historically low fuel prices without the premiums associated with locking in a price at the pump

## Next Step

After MBTA board authorization, MBTA would enter into a competitive bid process run by Omnicap (MBTA's swap advisor). The bank will be chosen based on price and the bank's credit rating.



# Request of the Fiscal and Management Control Board

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To authorize the MBTA, acting through the Chief Financial Officer and the Treasurer, acting singly:

- to enter into one or more hedges for a term not to exceed June 30, 2021 as they may determine to be necessary or appropriate to hedge the MBTA's financial risks related to the price of diesel fuel; provided that such hedges shall be procured via competitive bid process and shall hedge not more than 10.67 million gallons; and
- to execute any and all documents, certificates and other instruments necessary or desirable to effectuate the transactions contemplated by the foregoing vote.

The preceding votes shall take effect upon passage.



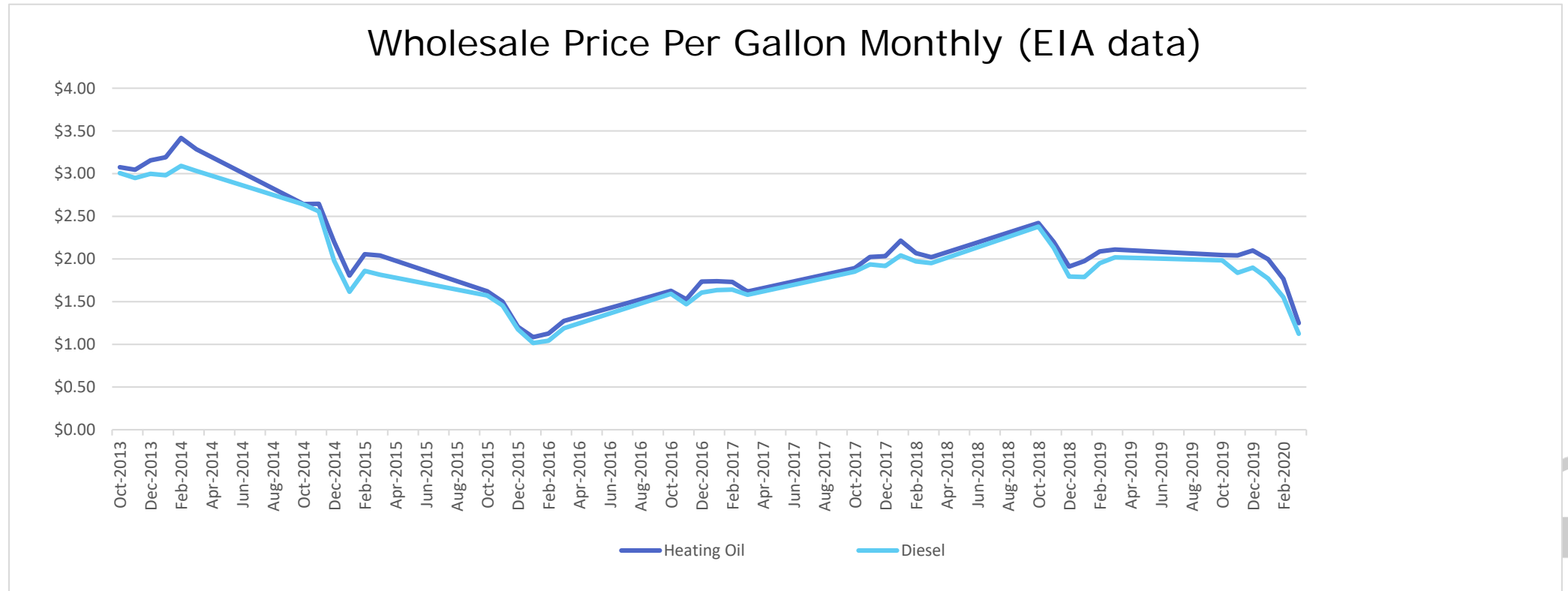
# Appendix





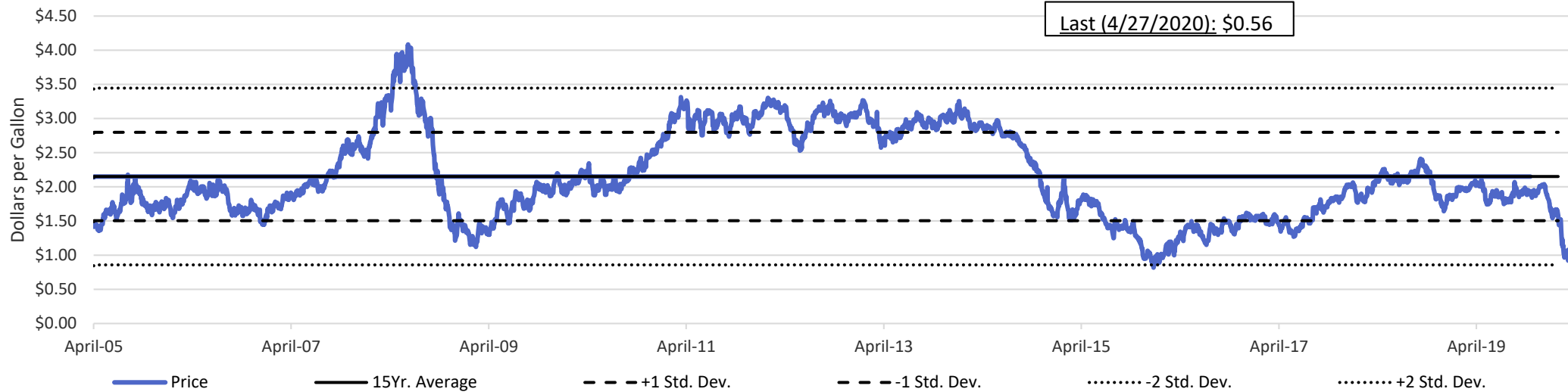
# MBTA Uses Heating Oil to Hedge Diesel

- One common method for hedging diesel is using the liquid No.2 Heating Oil futures contract traded on the CME Group Exchange
- Heating Oil and Diesel prices have been highly correlated in the past



# Historic Price Change

No. 2 Heating Oil Spot Price (NY) - 15 Years



- Prices have been volatile over the past decade with prices ranging from \$0.5 to over \$4.0 per gallon
- Monthly price changes are normally distributed
- The annualized standard deviation was 28.2% over the past 15 years

Monthly Price Change - Past 15 Years

