



**Massachusetts Bay  
Transportation Authority**

# Energy Hedge – FY22

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Joint MassDOT Board & Fiscal and Management Control Board

May 24, 2021

# 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 has historically 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  
Wells Fargo

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

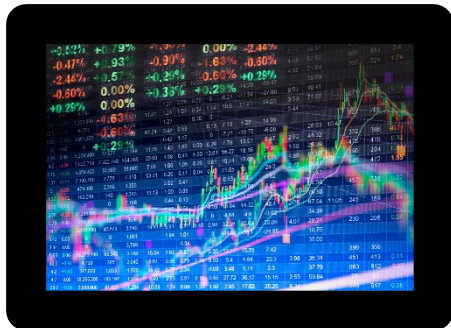


$$-\$0.15 + \$0.15 = \$0$$

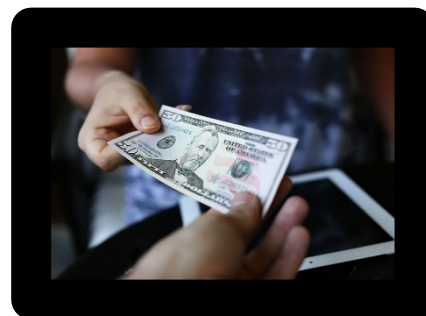


The result of  
changes in the  
price of Oil Futures

## HEDGE



Lock in rate at \$2 a gallon



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



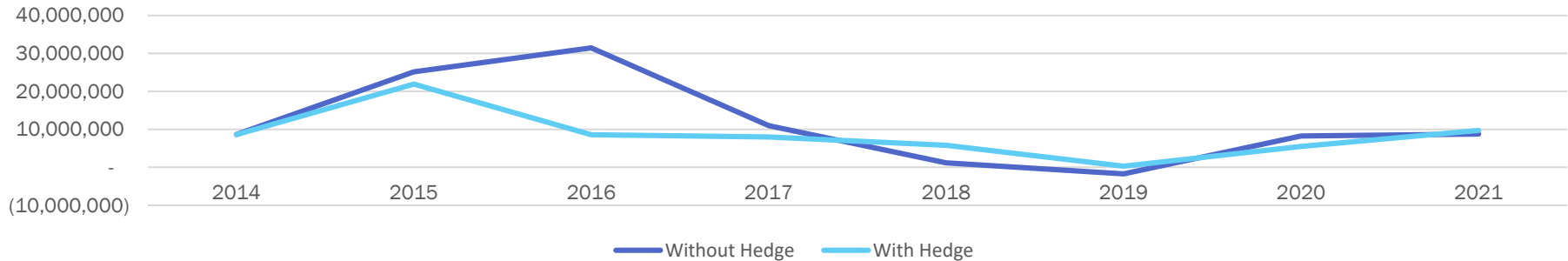
Futures decline to \$1.85  
(MBTA pays difference)

# Recent Hedging

	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
<b>Targeted percentage hedged</b>	90%	75%	50%	37%	50%	50%
<b>Gallons hedged</b>	18.7 million	15.7 million	10.3 million	8.1 million	8.8 million	9.9 million
<b>Providers</b>	Bank of America, Citi, Morgan Stanley	Citi, JP Morgan	Citi, Morgan Stanley	Goldman	Goldman	Wells Fargo
<b>Hedged Price Per Gallon</b>	\$2.50	\$1.79	\$1.51	\$1.71	\$1.85	\$1.29

- 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.

Budgetary variance - Dampening effect of Fuel Hedge



Without the fuel hedge, standard deviation is 1.8x higher (\$12.15M vs. \$6.64M)



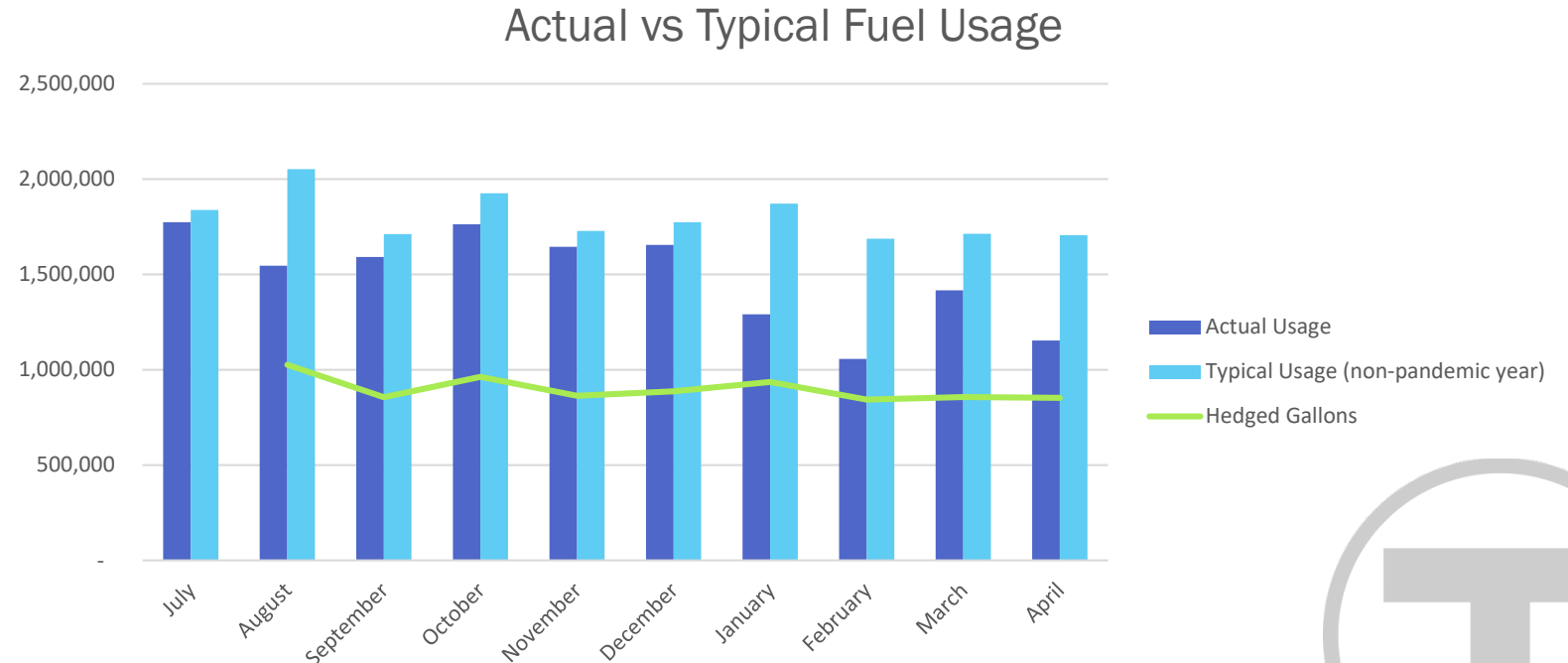
# Variation in the Quantity of Gallons Hedged

In FY21, we chose to hedge fifty percent (50%) of fuel usage during a typical year with the understanding that, given the decline in fuel usage as a result of the pandemic, more than 50% of our fuel program would likely be hedged.

Our fuel program averaged 61% hedged through March (see left chart).

Typical fuel usage versus actual usage is shown in the chart on the right.

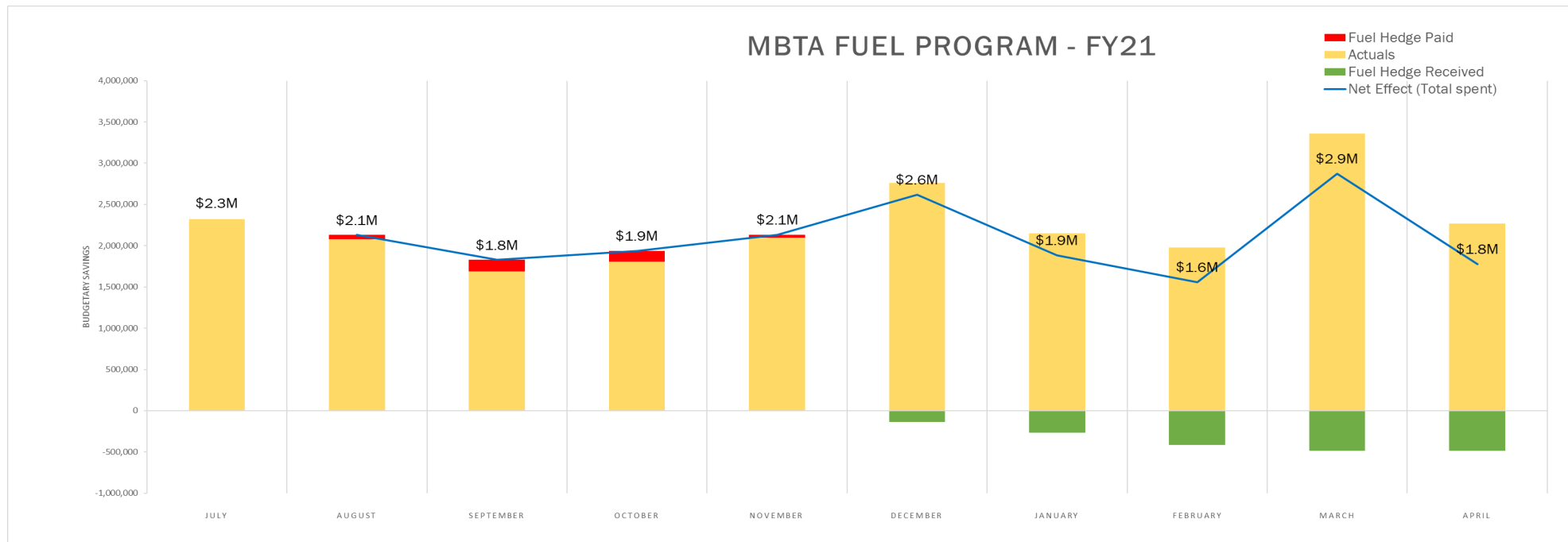
Month	Percentage
August	66.4%
September	53.8%
October	54.6%
November	52.5%
December	53.6%
January	72.5%
February	79.8%
March	60.5%
April	74.0%



# FY21 Fuel Hedge

- August 2020 through June 2021 fuel hedge contract
- Hedged roughly 50% of projected usage during normal times during 9-month period (9.9M Gallons)
- Entered a hedge with Wells Fargo for \$1.291 per gallon
- Energy hedge has resulted in a net payments from our counterparty YTD of \$1.4 million.

MBTA Fuel Hedge VS Pump Price Variance (August 2020- April 2021)



Yellow is what was paid at the pump (actual)  
 Red/green represents fuel hedge. Red is a payment we made to the counterparty. Green is a payment we received from the counterparty.  
 Blue line represents what MBTA actually paid on fuel (hedge and pump prices combined)



# Proposed FY22 Fuel Hedge

## Recommendation

- Based on historic usage, adjusted for the pandemic, the MBTA is budgeting for 19.3 million gallons in fuel purchases between its commuter rail and bus in FY22
- The MBTA is proposing to hedge 50% of its budgeted usage (9.7 million gallons). Unhedged the MBTA could be exposed to \$9-\$20 million (one-to-two standard deviations) 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 \$4.5-\$10 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 receives board authorization, MBTA will 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.



# Requested Vote - FMCB

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## VOTED:

To recommend that the Board of Directors of the Massachusetts Department of Transportation authorize the Chief Financial Officer or Treasurer of the Massachusetts Bay Transportation Authority ("MBTA"):

- to enter into one or more hedges, with terms expiring no later than June 30, 2022, as determined 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 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.





# Requested Vote – MassDOT Board

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## VOTED:

To approve the recommendation of the Fiscal and Management Control Board to authorize and to hereby authorize the Chief Financial Officer or Treasurer of the Massachusetts Bay Transportation Authority ("MBTA"):

- to enter into one or more hedges, with terms expiring no later than June 30, 2022, as determined 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 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.

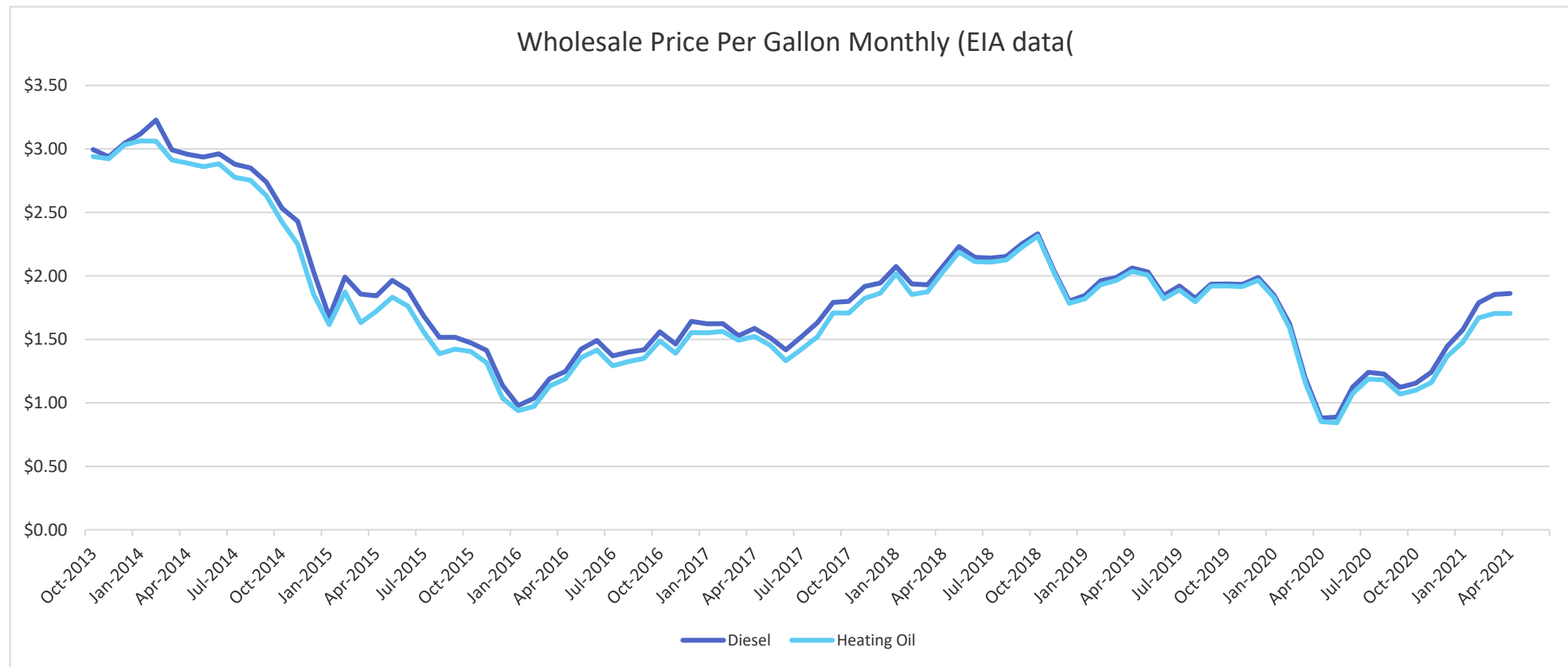


# Appendix

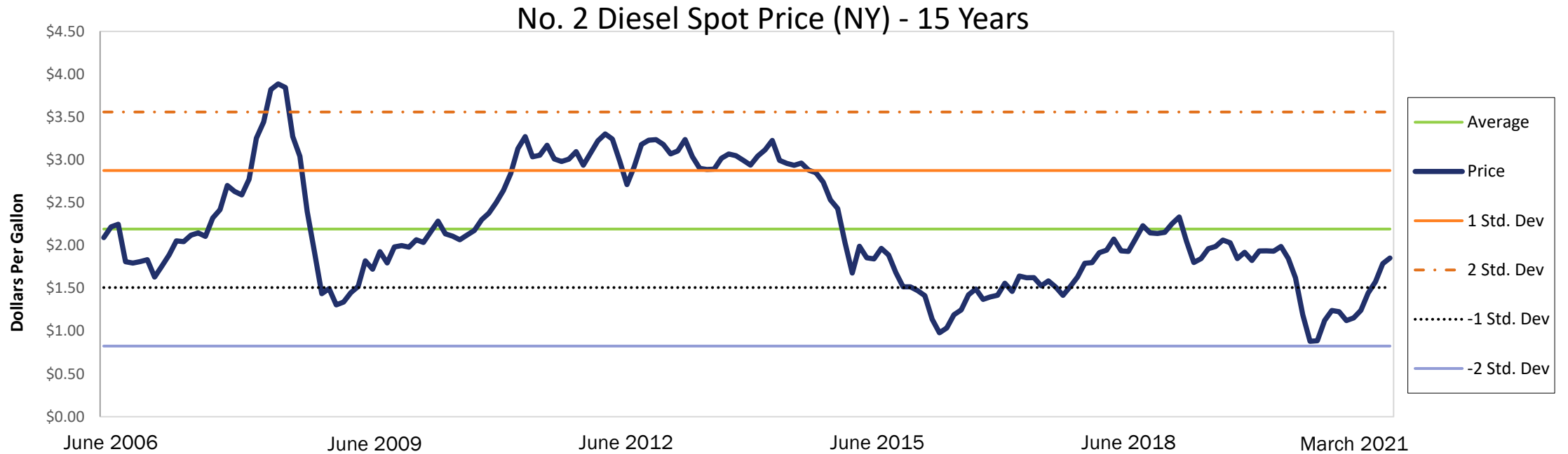


# MBTA Uses Heating Oil to Hedge Diesel

- The industry standard 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



- Prices have been volatile over the past 15 years with prices ranging from \$0.88 to over \$3.887 per gallon
- Monthly price changes are normally distributed
- The annualized standard deviation of 29.08% can lead to large budget surprises

