



So many fuel choices!?!

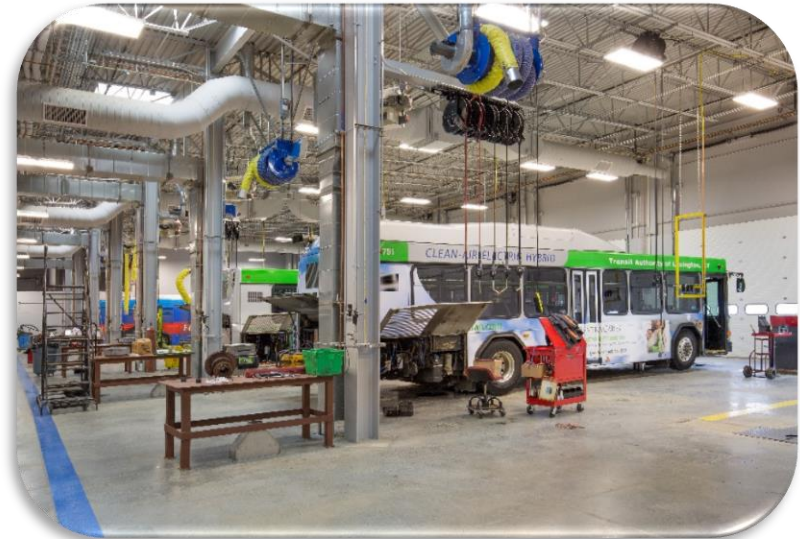
Lextran's experience with Compressed Natural Gas (CNG) and fully electric, zero emissions vehicles

Presentation at
APTA Bus and Paratransit Conference May 2017



Lextran at a glance

- Public transportation provider in Fayette County since 1973
 - Fixed Route
 - Paratransit
 - Vanpool
- 16,000 trips per day
- 3.7 million customers in 2016
- 70% of trips for work or school
- Fleet
 - 67 buses (5 Electric, 7 CNG, 4 hybrids)
 - 49 paratransit vehicles
- County-wide paratransit service



Consideration for alternative fuels?

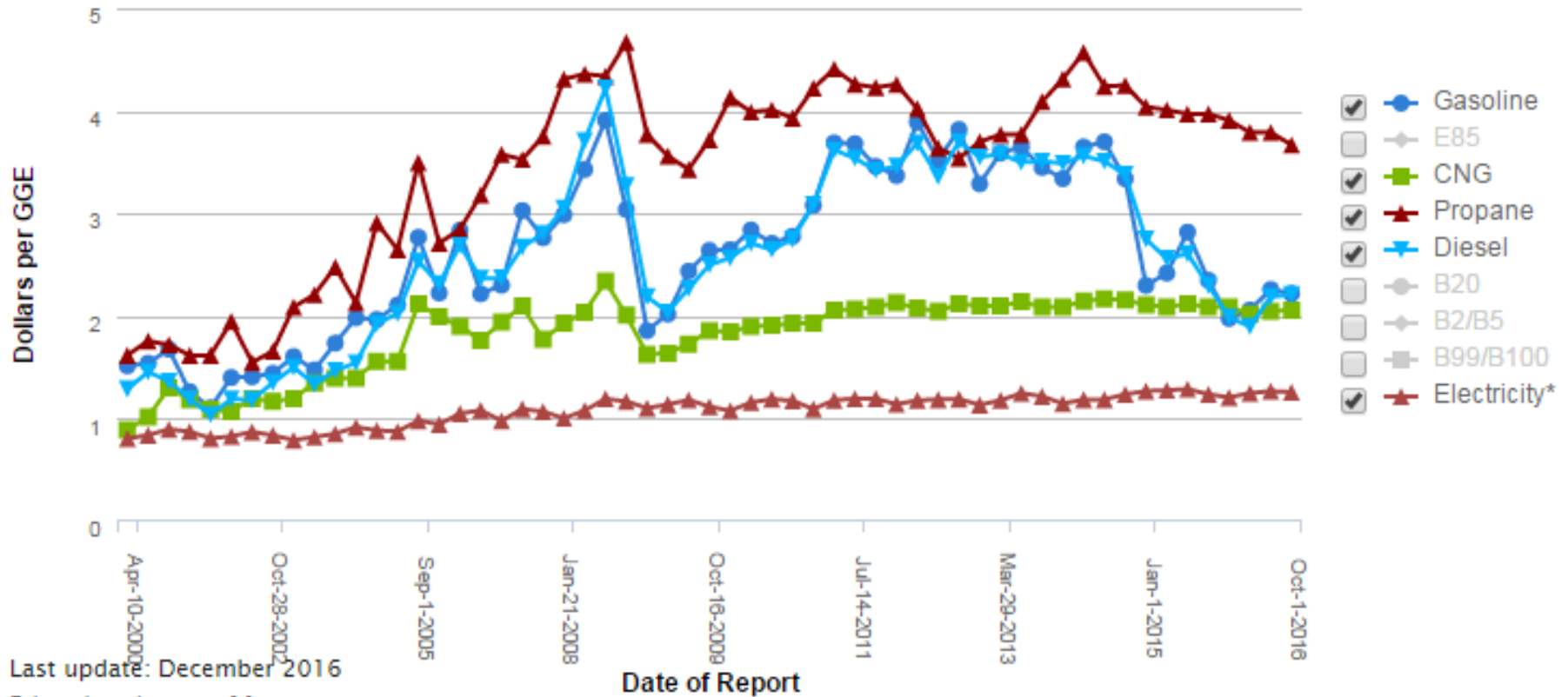


- Decreasing carbon emissions from the tailpipe = cleaner air
- Stability in energy prices = more balanced budgets
- “Greener” Brand = increased ridership
- Different engine type = lowered maintenance costs
- ‘Station’ Infrastructure = increased initial capital costs

Average Retail Fuel Price 2000-2016

Average Retail Fuel Prices in the U.S.

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Source: US Department of Energy

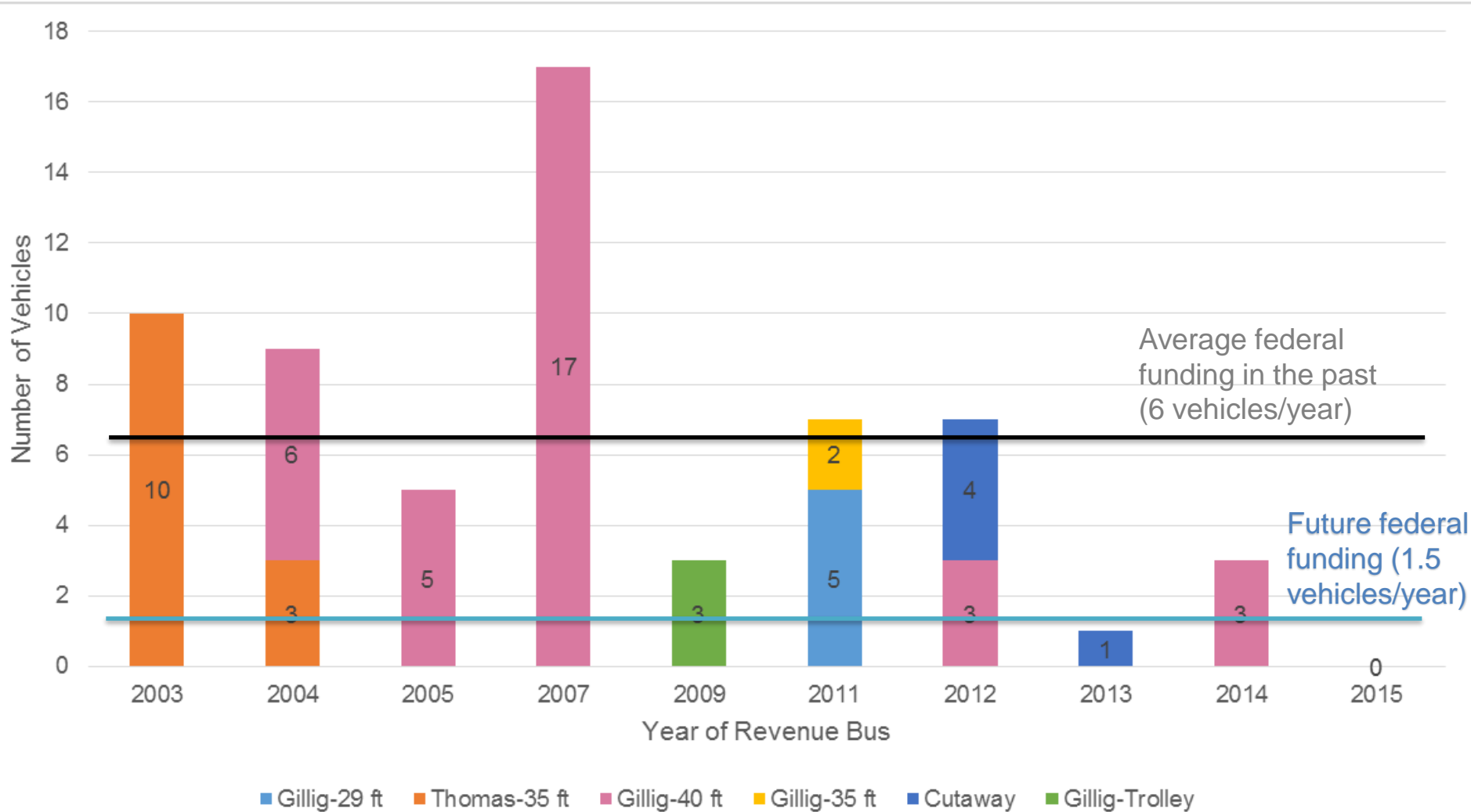
<http://www.afdc.energy.gov/fuels/prices.html>

*Electric prices are reduced by a factor of 3.4 because electric motors are 3.4 times more efficient than internal combustion engines.

**Propane prices reflect the weighted average of "primary" and "secondary" stations.



...and fleet needs.



Weighted Average Age = 8.4 years / FTA Useful life is 12 years



Emissions Comparison



	Diesel Bus	CNG Bus	Electric Bus
VOC	51.3	61.6	0
CO	229.3	1583.3	0
NOx	674.8	50.8	0
PM 2.5	46.7	1.2	0
PM 10	3.6	3.6	0



Funding and “Schedule”

- CMAQ award for seven CNG in early 2014
- Broke ground on new headquarters December 2014
- LoNo award in February 2015
- RFP for CNG Fueling – DBOM in August 2015
- RFP for design and construction of electric charging August 2015
- Back out for Bid in April 2016 for CNG – design build
- Moved into new headquarters April 2016, and took delivery of CNG, revenue service for CNG by June
- Temporary fueling solution until January 2017
- Charger completed October 2016, Revenue service in January 2017

CNG at Lextran

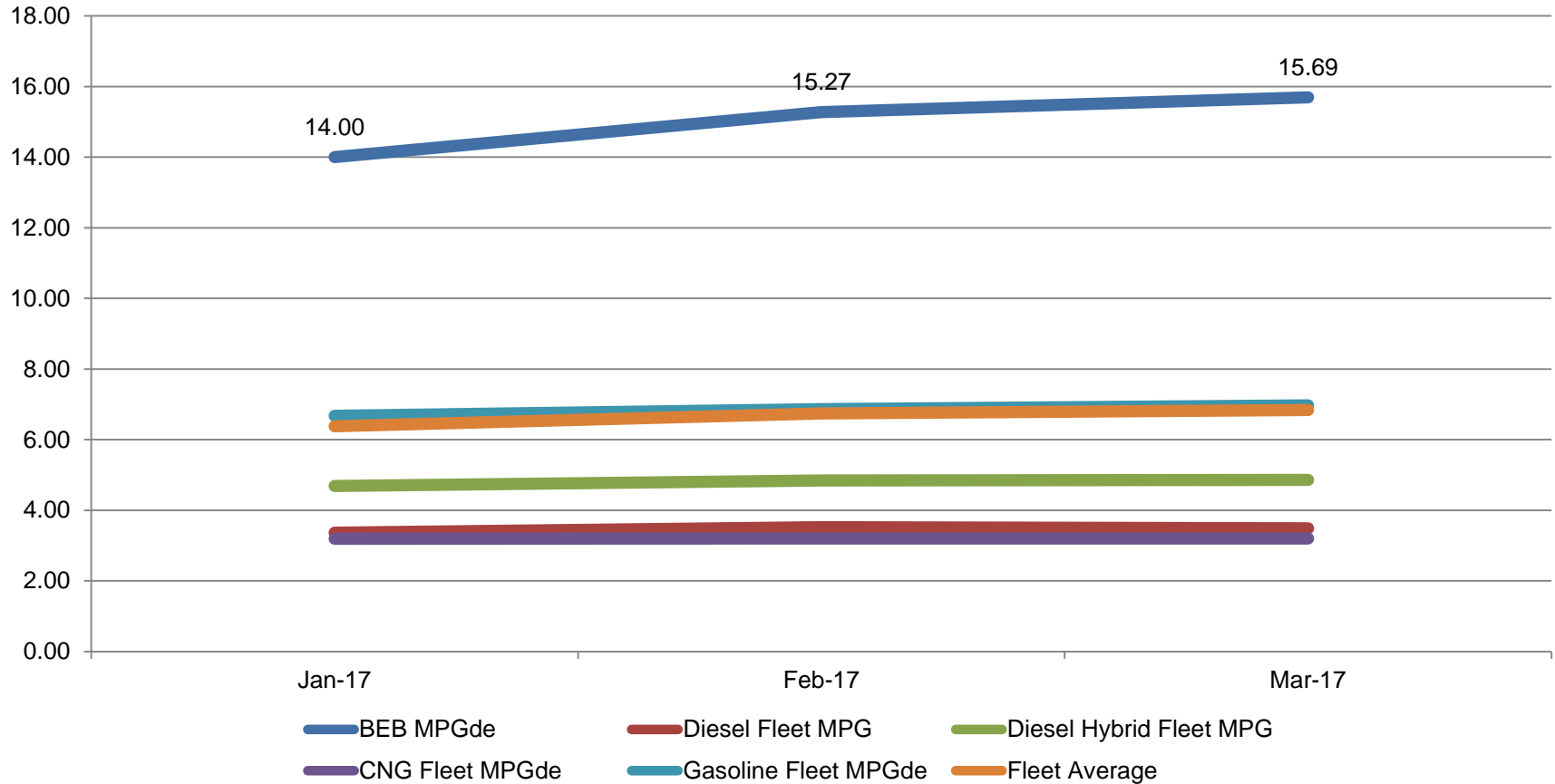


On route Electric Charging Station



KPI: Diesel Gallon Equivalent

Monthly Miles per Gallon Diesel Equivalent



Ongoing Fuel/DGE Costs:

	Contract Rate	Fiscal Year average
Diesel Fuel / Hybrid	OPIS - \$ 0.0252	\$1.53 per gallon
CNG Bus	Actual gas + \$ 0.35 DGE	\$ 1.39 per DGE
Electric Bus	Utility company rates	\$.71 per DGE
Gasoline	OPIS - \$ 0.0201	\$ 1.69 per gallon

DGE = diesel gallon equivalent



Fleet Make-Up as of January 2017

	In Fleet	On order	To Replace *	Estimated Cost per Bus	Station Costs
Diesel Bus	45	0	15	\$412,995	Part of HQ project
CNG Bus	7	5	15	\$473,685	\$868,000
Electric Bus	5	1	15	\$868,709	\$650,000
Hybrid Electric	6	0	0	N/A	
Gasoline	4	0	0	N/A	
TOTAL	67	6			

* Fleet Replacement highly dependent on state and federal grant funding



Conclusions

- “Station” costs for fueling infrastructure vary considerably, land cost and site selection critical
- Too early to determine changes to Maintenance cost, especially over the life of the bus (12 years)
- Mix of fleet and energy sources can smooth budget, but changes operating procedures
- Energy cost fluctuations are likely to continue

