

# Memorandum



**Date:** February 28, 2020

Agenda Item No. 2(B)(3)  
May 5, 2020

**To:** Honorable Chairwoman Audrey M. Edmonson  
and Members, Board of County Commissioners

**From:** Carlos A. Gimenez  
Mayor

A handwritten signature in black ink, appearing to read "Carlos A. Gimenez", written over a circular stamp or seal.

**Subject:** Report Regarding Reduction of Fuel Consumption - Directive No. 182156

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This report is being provided to the Board of County Commissioners (Board) pursuant to Resolution No. R-1034-18, sponsored by Commissioner Daniella Levine Cava, which directed the County Mayor or County Mayor's designee to establish new goals for the reduction of gasoline and diesel fuel across County operations; identify opportunities within the Miami-Dade Police Department (MDPD) to improve fuel efficiency; increase the purchase and use of electric buses and establish new goals for battery electric powered buses; incorporate the goals set forth in the resolution in the Green Print Sustainability Plan; and provide annual reports to the Board detailing the progress made toward achieving the goals in this resolution.

Miami-Dade County services a population of approximately 2.761 million residents. On average, the County expends an estimated 12 million gallons of diesel and 4.6 million gallons of unleaded fuel on an annual basis across 1,898 square miles.

An assessment of the average annual diesel and unleaded fuel usage for previous years (see Attachments 1 and 2) revealed a decline in diesel consumption. The attached comprehensive report details annual fuel consumption from FY 2016-17, FY 2017-18, and FY 2018-19 for the number of unleaded on-road vehicles in the County by fleet class, the average miles per gallon, the annual miles driven, the quantity of fuel consumed by fuel type, and the cost of fuel by fuel type. The consumption for diesel fuel in FY 2017-18 declined by 6 percent (876,303 gallons) and by the end of FY 2018-19, the consumption further declined by 11 percent (1,401,303 gallons). The unleaded fuel usage in FY 2016-17 through FY 2018-19 remained steady across County departments due to ongoing operational requirements by departments such as MDPD, Fire Rescue, and Solid Waste.

Throughout the years, the County has implemented a combination of policy and administrative actions through the reprogramming of certain segments of its vehicle fleet that have contributed to the reduction of fuel consumption. Some of these actions include: purchase of smaller fuel-efficient vehicles, battery/gas hybrid vehicles, full electric vehicles, and Compressed Natural Gas (CNG) buses. Overall, the County has deployed 528 hybrid vehicles and 64 hybrid transmission garbage trucks countywide in order to achieve long-term reduction goals in fossil fuel and carbon dioxide emissions.

The Department of Transportation and Public Works (DTPW) has taken a number of actions by upgrading its aging, diesel bus fleet to CNG buses which has begun to curb fuel dependency countywide. To date, DTPW has deployed 302 CNG passenger buses and is in the process of receiving an additional 118 CNG buses. As a result of the CNG deployment, DTPW has realized a reduction in diesel fuel consumption by 912,354 gallons in FY 2017-18 and 934,416 gallons in FY 2018-19. DTPW is in the process of acquiring an additional 140 CNG and 33 fully electric passenger buses and is planning a future deployment of 100 fully electric buses to replace its conventional diesel fueled passenger buses. Electric buses do not use fossil fuels and its proven technology has been used by transit operators since 2010. Electric buses offer environmental and health benefits, such as helping to lower emissions that contribute to poor air quality and global climate change, as well as economic benefits, such as potential cost savings. As these

aforementioned units are deployed, it is anticipated that DTPW will realize further diesel fuel consumption reductions and will be in alignment with the resolution's reduction goals.

MDPD continues to explore new technology such as hybrid/high fuel economy vehicles in order to reduce its carbon footprint and exhaust emissions without sacrificing service and response time. Currently, MDPD utilizes various vehicle types within its fleet, selected to meet specific assignments throughout the County. For example, MDPD uses "Pursuit Rated" vehicles for its patrol duty fleet due to reinforced suspensions, engine cooling systems, larger brakes, high-yield alternators, and other related features. The MDPD is analyzing performance plus economic benefits to offset the additional cost of converting their "Pursuit Rated" fleet to hybrid technology. A number of manufacturers have released hybrid and fully electric "Pursuit Rated" vehicles in recent years. Though these units appear promising, they are significantly more expensive, ranging between \$10,000 to \$13,000 more per unit when compared to conventional, police pursuit sedan counterparts; and require additional battery cells, which are larger and require greater cargo space, increasing the vehicle weight.

MDPD has also reviewed various idle reduction technologies. On average these units range from \$3,500 to \$5,500 respectively, not including installation charges. However, due to the operational demands of the electrical consumption from various mounted police accessories i.e. emergency lights at intersection, computer terminals, and radio systems, the technology was deemed not feasible.

The Office of Resilience will work collaboratively with the Internal Services Department, DTPW, and other County departments that procure fleet vehicles and fuel to incorporate the fuel reduction goals outlined in Resolution No. R-1034-18 into the Green Print Sustainability Plan, as the County continues pursuing methods to further reduce fuel consumption and the carbon footprint of our operations.

This report will be placed on the next available Board Agenda pursuant to Ordinance No. 14-65. Should you need further information, please contact Tara C. Smith, Director of the Internal Services Department, at 305-375-5893.

#### Attachments

c: Abigail Price-Williams, County Attorney  
Geri Bonzon-Keenan, First Assistant County Attorney  
Office of the Mayor Senior Staff  
Yinka Majekodunmi, CPA, Commission Auditor  
Department Directors  
Linda Cave, Director, Clerk of the Board Division  
Eugene Love, Agenda Coordinator





**DIESEL FUEL VEHICLE OPERATIONS**

Vehicle Class	Vehicle Description	FY 16/17		FY 17/18		FY 18/19		FY 19/20		FY 20/21		FY 21/22		FY 22/23		FY 23/24		FY 24/25			
		Count	Miles	Count	Miles	Count	Miles	Count	Miles	Count	Miles	Count	Miles	Count	Miles	Count	Miles	Count	Miles		
701	STRAIGHT TRUCKS - BUS - DENTAL CLINIC	1	1,831	1	1,831	1	1,831	1	1,831	1	1,831	1	1,831	1	1,831	1	1,831	1	1,831		
847	SUPPORT EQUIPMENT (NON-BUS)	684	411,621	672	407,639	672	407,639	672	407,639	672	407,639	672	407,639	672	407,639	672	407,639	672	407,639	672	407,639
251	BUSES	761	28,988,577	754	28,988,577	754	28,988,577	754	28,988,577	754	28,988,577	754	28,988,577	754	28,988,577	754	28,988,577	754	28,988,577	754	28,988,577
251	FIRE APPARATUS	251	429,984	251	429,984	251	429,984	251	429,984	251	429,984	251	429,984	251	429,984	251	429,984	251	429,984	251	429,984
4,105		3,990	50,956,235	3,990	50,956,235	3,990	50,956,235	3,990	50,956,235	3,990	50,956,235	3,990	50,956,235	3,990	50,956,235	3,990	50,956,235	3,990	50,956,235	3,990	50,956,235
Diesel Fuel Totals:		4,105	13,597,668	4,022	12,715,565	4,022	12,715,565	4,022	12,715,565	4,022	12,715,565	4,022	12,715,565	4,022	12,715,565	4,022	12,715,565	4,022	12,715,565	4,022	12,715,565

Percent Change FY 16/17 to 17/18 in Fuel Consumed: 26%  
 Percent Change FY 17/18 to 18/19 in Fuel Consumed: -2%  
 Percent Change FY 18/19 to 19/20 in Fuel Consumed: -10%  
 Percent Change FY 19/20 to 20/21 in Fuel Consumed: 2%  
 Percent Change FY 20/21 to 21/22 in Fuel Consumed: -12%  
 Percent Change FY 21/22 to 22/23 in Fuel Consumed: -12%  
 Percent Change FY 22/23 to 23/24 in Fuel Consumed: -12%  
 Percent Change FY 23/24 to 24/25 in Fuel Consumed: -12%



UNLEADED FUEL Vehicle Classifications

Vehicle Class	Vehicle Description	FY 16/17 Vehicle Count	FY 17/18 Vehicle Count	FY 18/19 Vehicle Count	FY 16/17 Annual Miles Driven	FY 17/18 Annual Miles Driven	FY 18/19 Annual Miles Driven	FY 16/17 Qty Fuel Consumed (gal)	FY 17/18 Qty Fuel Consumed (gal)	FY 18/19 Qty Fuel Consumed (gal)	FY 16/17 Fuel Consumed Variance	FY 17/18 Fuel Consumed Variance	FY 18/19 Fuel Consumed Variance	Percent Change FY 16/17 to 17/18 in Fuel Consumed	Percent Change FY 17/18 to 18/19 in Fuel Consumed	FY 16/17 Fuel Consumed Variance	FY 17/18 Fuel Consumed Variance	FY 18/19 Fuel Consumed Variance	FY 16/17 Fuel Cost	FY 17/18 Fuel Cost	FY 18/19 Fuel Cost	FY 16/17 MPG	FY 17/18 MPG	FY 18/19 MPG																		
4793	STRAIGHT TRUCKS - SERVICE - FUEL & LUBE	1	0	0	847	-	-	207	-	-	(207)	-	-	-100%	0%	-	-	-	\$	\$	\$	-	-	-																		
4793	STRAIGHT TRUCK-PUBLIC UTIL INSULATED AERIAL	1	1	2	1,049	579	210	428	183	183	(245)	107	(207)	-57%	-175%	(207)	107	(207)	\$	\$	\$	2	3	2																		
5422	STRAIGHT TRUCKS-EMERGENCY SERVICES-SUPPORT	12	11	9	70,375	60,225	60,308	27,386	27,515	27,515	129	129	(3,223)	-12%	-12%	(3,223)	129	(3,223)	\$	\$	\$	2	2	2																		
5711	STRAIGHT TRUCK - GENERAL - FLAT BED	1	1	1	3,649	3,654	4,043	537	564	564	27	27	59	5%	5%	59	59	59	\$	\$	\$	7	6	7																		
5793	STRAIGHT TRUCKS - BUS - TRANSIT BUS	1	11	0	9,413	158,960	-	2,241	44,279	-	42,037	42,037	(3,700)	-1876%	-5%	(3,700)	42,037	(3,700)	\$	\$	\$	4	4	-																		
6795	STRAIGHT TRUCKS - BUS - RV	6	0	0	984	-	-	370	-	-	(370)	-	-	-100%	0%	(370)	-	-	\$	\$	\$	-	-	-																		
7111	STRAIGHT TRUCKS - GENERAL PURPOSE - FLAT BED	1	0	0	497	-	-	61	-	-	(61)	-	-	-100%	0%	(61)	-	-	\$	\$	\$	-	-	-																		
7113	STRAIGHT TRUCKS - GENERAL PURPOSE-UTILITY BED	2	1	0	8,896	3,087	-	2,173	627	627	(1,546)	-	-	-71%	-347%	(1,546)	-	-	\$	\$	\$	4	5	-																		
7114	STRAIGHT TRUCKS - GENERAL PURPOSE - VAN BODY	1	0	0	751	-	-	117	-	-	(117)	-	-	-100%	0%	(117)	-	-	\$	\$	\$	-	-	-																		
132B	AUTOMOBILE - INTERMEDIATE - HYBRID	198	198	195	1,809,325	1,374,649	1,710,061	30,750	21,384	21,384	9,366	44%	39,254	44%	55%	16,870	39,254	16,870	\$	\$	\$	45	45	45																		
133A	AUTOMOBILE - INTERMEDIATE - HYBRID	337	338	327	2,986,353	2,726,290	2,439,533	64,780	53,838	53,838	(10,942)	-17%	48,152	-31%	-31%	(16,628)	48,152	(16,628)	\$	\$	\$	46	51	51																		
152H	PICKUPS - HALF TON - HYBRID	4	4	4	84,019	23,588	95,776	2,214	8,413	8,413	6,200	280%	11,338	280%	108%	9,125	11,338	9,125	\$	\$	\$	16	10	10																		
161A	SPORT UTILITY - COMPACT - 5 PASSENGER	80	81	69	580,132	508,159	484,159	1,559	1,702	1,702	1,143	73%	1,626	73%	-2%	(89)	1,626	(89)	\$	\$	\$	19	17	17																		
161B	SPORT UTILITY - MID SIZE - 6 PASSENGER	155	162	150	1,786,601	859,274	645,280	65,690	58,466	58,466	(7,224)	-11%	45,128	-11%	-35%	(20,564)	45,128	(20,564)	\$	\$	\$	17	15	14																		
161C	SPORT UTILITY - MID SIZE - 7 PASSENGER	32	34	33	320,418	385,909	371,510	16,938	22,211	22,211	5,273	31%	21,290	31%	19%	4,292	21,290	4,292	\$	\$	\$	19	19	19																		
162A	SPORT UTILITY - HALF TON - 7 PASSENGER	3	3	2	21,340	22,255	10,403	1,111	1,353	1,353	242	22%	701	22%	-30%	(410)	701	(410)	\$	\$	\$	17	15	14																		
162B	SPORT UTILITY - HALF TON - 8 PASSENGER	5	5	4	55,979	50,242	48,673	3,718	3,281	3,281	(436)	-11%	3,824	-11%	3%	1,06	3,824	1,06	\$	\$	\$	15	15	15																		
242A	VAN - CARGO - PRISON INSERT	17	15	10	196,510	217,201	70,823	11,425	10,491	10,491	(934)	-8%	7,134	-8%	-41%	(4,291)	7,134	(4,291)	\$	\$	\$	10	10	10																		
242B	VAN - CARGO - ANIMAL TRANSPORT	9	5	3	139,884	53,161	36,113	11,657	6,304	6,304	(5,353)	-46%	4,296	-46%	-108%	(7,124)	4,296	(7,124)	\$	\$	\$	8	8	8																		
479A	STRAIGHT TRUCKS-BUS-CUTAWAY HANDICAP ACCESS	1	1	1	14,887	8,456	18,039	1,415	1,374	1,374	(41)	-3%	2,302	-3%	65%	887	2,302	887	\$	\$	\$	8	6	6																		
Unleaded Fuel Totals:		7,997	8,082	8,160	71,595,145	63,887,055	66,542,719	4,374,967	4,622,287	4,615,851	248,220	6%	4,615,851	6%	5%	241,784	4,615,851	241,784	\$	\$	\$	12	12	12																		
																				\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$