

Memo

To: Board of Managers
CC: Shana Davis-Cook, Village Manager
From: John M. Fitzgerald, Chief of Police
Date: February 20, 2019
Re: Status of police car replacements

Overview

In our current (FY19) CIP budget, the Board has reserved \$91,000 to replace two marked police cars consistent with the Village's Police Vehicle Replacement Policy (effective October, 2013). We propose to forgo the purchase of these two replacement cars until FY20, and we are asking the Board to tell us if they would prefer to purchase a hybrid (gasoline engine combined with an electric motor) police car at an additional cost of approximately \$3,200 over the gasoline-only variant.

I recommend that we purchase two Ford gasoline/electric hybrid SUVs in FY20 for a total of \$108,000 which will cover the cost of the cars plus equipment (new dashboard camera system, new laptop computer, console, prisoner partition, etc.) and installation.

Background

Early last summer, I began to explore the police car market to determine what to buy. Ford was planning to update its police SUV for 2020, and their 2019 model production run was going to be very short in order to re-tool their factory for the new 2020 model. Ford's manufacturing facility is currently down for retooling, and production of the 2020 model will not begin until late May of this year. Delivery of a new 2020 Ford cannot occur until August or September, 2019 at the earliest. If we choose to buy a Ford product (which I am recommending), we would not be able to buy these cars until next fiscal year (FY20).

Because the abbreviated 2019 Ford production run meant that we could not order a 2019 model before the plant shut down, I explored pricing for the 2020 model. The pricing (using the existing Montgomery County contract) that I initially received for the 2020 Ford SUV surprised me; it was about \$11,000 more than we had paid for our previous Ford SUVs, so I began to look for an alternative.

Seeing an opportunity to seize market share with the Ford SUV temporarily unavailable, Dodge quickly introduced a police variant of their 2019 Durango SUV. The Dodge is in production now and may be ordered; its pricing is more reasonable--about \$2,800 more than we paid for our current cars. Police agencies in our area have yet to buy the Dodge SUV for police use as this is a brand new variant; there is no police-use experience out there with this model. Further, the custom work to outfit the Dodge with police equipment will require our installer to learn new methods and do some problem solving the first time they 'build' our car. Nonetheless, due to the initial pricing, I was leaning toward buying the Dodge product.

New information, new recommendation

Before making a final recommendation, I decided to see if I could find more competitive pricing for the Ford SUV. I reached out to Hertrich Fleet Sales (the dealer that sold our previous cars to us). I learned that they hold the Howard County contract for the Ford SUV, and their pricing is better than that which I had originally been given. The price of a comparably-equipped gasoline-only 2020 Ford SUV is about \$7,500 more than we paid for our current cars 5 years ago, and about \$4,700 more than a comparably-equipped 2019 Dodge SUV. This pricing made choosing a 2020 Ford SUV a more reasonable decision, especially when you consider that this product has been widely used by police departments for several years and we (and our maintenance shop) have had a good experience with it. The Dodge police variant is in its first year of production, which gives me pause. Additionally, I

have since learned from Ford that the interior dimensions of the new model will be unchanged, so that our custom parts will transfer to the new model. By comparison, the Dodge will require all new parts.

I am now in favor of staying with Ford which would mean (subject to Board approval) that we would not spend this year's allocated funds (\$91k) for two new cars; we would instead budget funds within the FY20 CIP and buy the replacement cars after July 1, 2019.

If we buy a Ford, the remaining question is which model—gasoline-only, or gasoline/electric hybrid?

Green Procurement

In accordance with the "Guidelines on Green Procurement and Greening the Fleet of Vehicles for Chevy Chase Village," we continue to look into procuring "green" vehicles for police patrol functions.

We currently use Ford all-wheel drive SUVs and the officers have found them to be a very good car for patrolling the Village—especially with the many house checks that they perform. The SUV platform is much easier to get into and out of due to its higher seat height and larger door opening, and the cargo area in the rear is much more useful than a standard sedan trunk. Also, the all-wheel drive system is excellent for any weather condition and it is a big improvement over the two-wheel drive sedans that we had previously. I am convinced that we should stay with an all-wheel drive SUV-style car.

Ford redesigned their police SUV for model year 2020 and they offer two different powertrains: a gasoline-only car, and a gasoline/electric hybrid car. The hybrid costs about \$3,200 more than its standard-fuel sibling, but Ford claims that the hybrid will save fuel and reduce CO₂ emissions. Based on projected EPA estimates of fuel economy for the hybrid and the number of miles we drive annually, we might save about 100 gallons of fuel per year per vehicle¹.

Most interesting, however, is the fuel savings from reduced idling time. The hybrid car's engine stops automatically and the vehicle's accessories are powered by the hybrid's battery when the car sits still. The engine cycles on and off periodically to recharge the onboard battery as needed. Ford's data shows that a police car idles about 60% of a work shift. Even arbitrarily moving that number down to 30% of a work shift to be very conservative in our estimates, this feature could save us an additional 500+ gallons of fuel per car per year². A total annual savings of 600 gallons of gasoline would result in a reduction of over 11,000 pounds³ of CO₂ emitted from the tailpipe of one car over the course of a year. Assuming \$2.50/gallon of fuel, we would save at least \$1,500 per year per vehicle. In the 5-year period of our ownership of the car (based on our vehicle replacement policy), the Village would save \$7,500 in fuel costs and reduce CO₂ emissions by 55,000 pounds.

It appears that there are solid economic and environmental reasons to opt for the hybrid model. That is the model that I recommend that we buy. The cost detail is in the below table.

¹ Our current cars have a combined EPA fuel economy of 18 mpg. The hybrid cars are estimated to get a combined 24 mpg. Each vehicle drives approximately 8,000 miles per year. $8,000 \text{ miles/year} \div 18 \text{ mpg} = 444 \text{ gallons/year}$; $8,000 \div 24 = 333$. Net savings is 111 gallons.

² $12 \text{ hours/shift} \times 0.3 = 3.6 \text{ hours/shift idling} \times 2 \text{ shifts/day} = 7.2 \text{ hours idling per day} \times 365 \text{ days/year} = 2,628 \text{ hours idling/year} \times 0.2 \text{ gallons of fuel per hour} = 525 \text{ gallons of fuel per year per vehicle due to idling}$.

³ Burning one gallon of E10 (90% gasoline, 10% ethanol) fuel produces about 18.95 pounds of CO₂ (17.68 pounds emitted from the fossil fuel content, the remainder from the ethanol content) according to data provided by the [U.S. Energy Information Administration](#). $600 \text{ gals E10} \times 18.95 \text{ pounds CO}_2/\text{gallon} = 11,370 \text{ pounds CO}_2$.

Cost of a New Car

	2020 Ford Hybrid	2020 Ford V6	2019 Dodge V6
Base price	36,500	33,350	28,277
Rear door locks inoperable	85	85	325
Driver's side LED spotlight	420	420	581
Cargo area dome lamp	50	50	0
Tinted glass	120	120	0
BLIS-blind spot/cross traffic alert	545	545	395
Reverse sensing	295	295	0
Wiring package	590	590	1171
SUBTOTAL	38,605	35,455	30,749
Post-production outfitting			
Mobile laptop computer	4,700	4,700	4,700
Dashcam system	4,900	4,900	4,900
Install labor (estimated)	3,500	3,500	4,000
New upfit parts (estimated)	2,000	2,000	3,000
Grand total	53,705	50,555	47,349