San Mateo County's Vehicle Purchase Program

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Issue

Does the San Mateo County realize a net savings from the purchase of hybrid vehicles?

Summary

In November 2003, an Operations Review Report on the Department of Public Works Fleet Management Division (Fleet Maintenance) encouraged the department to pursue opportunities to use hybrid vehicles wherever possible. The San Mateo County Audit Division prepared a report that included projected trade-in values for hybrids, and although the best information available at the time, projections were inaccurate. As a result, the conclusion that "The County can realize… fiscal savings … [from the purchase of hybrid vehicles]" may be erroneous.

The Grand Jury found that the depreciation cost of a hybrid vehicle is higher when compared to conventional powered vehicles. This may offset the savings from fuel consumption over the life of the hybrid vehicle. Because the Grand Jury did not perform a detailed and technical study of the operational cost of the hybrid and conventional powered vehicle, the Grand Jury recommends that the Board of Supervisors commission a new study to compare the ownership cost of hybrid with conventional vehicles commensurate with current trade in values.

Background

An Operations Review Report on the Department of Public Works Fleet Management Division was issued November 6, 2003 by the San Mateo County Controller's Office, Audit Division. This report encouraged Fleet Maintenance to use hybrid vehicles wherever possible. The report advised that hybrid vehicles would consume less fuel and produce lower emissions. It stated that "… the combined fuel and maintenance cost savings of a hybrid is a discounted $1,764 per unit over the 7-year life of the vehicle."[1] It was unclear from the report if the analysis included the depreciated value over the 7 year life of the vehicle.

The Public Works Department agreed with the report recommendation to replace assigned vehicles with hybrids when their normal replacement date comes due and to use the cost savings to fund the difference in costs from the standard replacement vehicle to a hybrid replacement vehicle.[2]

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[1] San Mateo County Controller's Office Operations Review Report on the Department of Public Works, November 6, 2003, page 2.

[2] Ibid, Recommendations, No. 2

The Vehicle Equipment Services Section of San Mateo County Public Works is responsible for vehicle replacements, vehicle specification preparation, long-range replacement, preventative maintenance, repairs, parts warranty and recall work, fueling, washing, tire purchase and inventory, motor pool rental, accident damage, abuse damage and modifications or special parts. The fleet consists of 342 compact and mid-size vehicles assigned to the motor pool (shared vehicles), specific departments, and specific individuals. Vehicle Fleet Maintenance bills 19 departments for the mileage cost generated by employee use.

Using the State of California bidding process, the County Purchasing Division utilizes a centralized procurement service to purchase vehicles. Purchasing follows Fleet Maintenance specifications which depend on department needs and the County Board of Supervisors directive for fuel efficiency guidelines and emission standards

Using the Department of Public Works replacement plan, fleet vehicles are replaced at 100,000 miles or 7 years of service for small cars and 100,000 miles or 10 years for larger vehicles including SUVs. Purchasing agent(s) may sell vehicles at public auction or by sealed bid. Auction services are selected based on their responses to a Request for Bid (RFB). The auction services currently in use are Auction Park in Modesto and Auction City in Menlo Park.

Investigation

The 2010-2011 San Mateo County Civil Grand Jury (Grand Jury) performed the following:

- Reviewed Board of Supervisors Resolution no. 069650 dated September 8, 2008, "… Approving a Fuel Efficient County Vehicle Purchasing Policy";
- Reviewed a 2008-2009 San Mateo County Civil Grand Jury Report titled "San Mateo County's Vehicle Fleet Management and Employee Vehicle Reimbursement Programs";
- Reviewed vehicle purchasing policies;
- Reviewed vehicle disposal policies contained in auction service contracts;
- Observed vehicle maintenance practices at various locations;
- Conducted interviews with key personnel in Fleet Maintenance; and
- Visited auction services and car dealerships.

Findings

1. The Board of Supervisors resolved in Resolution no. 069650 dated September 9, 2008 that "… all future [compact and midsize county] vehicle purchases will be hybrid models or other fuel-efficient models that are estimated by the manufacturer to achieve a minimum of 30 miles per gallon."

2. In the County of San Mateo FY 2010-2012 Recommended Budget for Vehicle and Equipment Services, a program objective was established to: "Increase the average fuel

economy to 30 miles per gallon by 2012 for midsize and compact vehicles…" This guideline was incorporated into the purchasing policies of Fleet Maintenance.

3. There are conventional powered compact and intermediate sedans that meet California's "green" designation and 30 miles per gallon (mpg) Environmental Protection Agency (EPA) estimate.[3] These vehicles achieve the mileage and emission requirements established by the Board of Supervisors and are listed below:

2011 Conventionally Powered Models					
Chevrolet			Honda		
Cobalt	Cruze	Malibu	Civic	Accord	Fit
Ford			Toyota		
Fusion	Focus	Fiesta	Camry	Corolla	Yaris

4. In 2008, the San Mateo County Board of Supervisors resolved that 32 percent of vehicles purchased should be fuel efficient defined as Ultra Low Emissions Vehicle (ULEV), Partial Zero Emissions Vehicle (PZEV) or Zero Emissions Vehicle (ZEV).[4]

5. The California Air Resources Board reports that "Gasoline vehicles meeting PZEV emission standards sometimes have even lower emissions than hybrid or alternate fuel vehicles"[5]. Honda, Ford, Toyota and Chevrolet have vehicles that are certified PZEV. These vehicles have four-cylinder conventional power trains and exceed 30 mpg fuel economy.

6. Since 2002, the Public Works Department has purchased 200 compact sedans with a hybrid power train. All hybrid compact sedans purchased were either Toyota Prius or Honda Civic. In addition, 7 hybrid powered Ford Escape SUVs were purchased between model years 2007 through 2010.

7. According to 2011 vehicle retail stickers, the base retail price of a Toyota Prius with hybrid system cost $7,280 more than a comparably-sized non-hybrid Toyota Corolla. The Honda Civic Hybrid cost $5,395 more than a non-hybrid Honda Civic LX.[6] Federal Tax Credits are available for non-governmental buyers. Since the county does not pay income taxes, the credit is of no benefit.

[3] Based on standards established by California Assembly Bill 32 and the California Air Resources Board,

[4] San Mateo County Board of Supervisors Resolution no. 069650 dated Sept. 9, 2008.

[5] Fact Sheet: 2003-11-04 California Environmental Protection Agency, Nov. 4, 2003.

[6] Dealerships visited were Putnam Toyota, Putnam Chevrolet, Mike Harvey Honda, and Towne Ford.

Comparable Hybrid and Conventional Compact Models[2]			
	Toyota		
	Conventional	Hybrid	Hybrid Cost
Model	Corolla	Prius	Over (Under)
Base Price	$ 16,520	$ 23,800	$ 7,280
EPA Mileage Range	26-35 mpg	51-48 mpg	25-13 mpg
Engine Type	PZEV	PZEV	n/a
	Honda		
	Conventional	Hybrid	Hybrid Cost
Model	Civic LX	Civic	Over (Under)
Base Price	$ 18,555	$ 23,950	$ 5,395
EPA Mileage Range	25-36 mpg	40-43 mpg	15-7 mpg
Engine Type	PZEV	PZEV	n/a

8. Throughout the 7 year life of current hybrids in operation, model year 2002 through 2008, the depreciation cost (original purchase price less resale value) of hybrid cars and SUVs exceeded the depreciation cost of conventional powered vehicles. The hybrid depreciation cost for 2003 model vehicles with mileage accumulation to 99,000 miles ranges from $3,970 to $4,465 per vehicle more than a comparable conventional powered vehicle[7]. Similar depreciation costs continue for all model years, 2002 through 2010. (See Exhibit A)

9. The depreciated value (salvage value) predicted in the 2003 Operations Review Report for compact hybrid vehicles traded in seven years after being put into operation, were higher than current Kelley Blue Book listings. The report used a salvage value of $6,524 for vehicles purchased in 2003 and traded in 2010. The January-March 2011 Kelley Blue Book reports an expected trade in value of $5,025. Thus the report may have overestimated the trade-in value by $1,509 or 23 percent more than each vehicle was worth.

10. According to the local auction vendors, for compact and midsize vehicles, the salvage value decreases rapidly after 100,000 miles.

Conclusions

1. The San Mateo County Audit Division report overestimated the trade-in value of hybrids. This brings into question the conclusion that "The County can realize… fiscal savings [from the purchase of hybrids]…"

[7] Kelly Blue Book used car guide for January through March 2011.

2. The “green” standard specified by the Board of Supervisors to achieve clean air and higher fuel economy can be achieved by purchasing compact and mid-sized vehicles with conventional four-cylinder engines.

3. Compact and mid-sized vehicles with conventional four-cylinder engines cost less to purchase and typically depreciate less than hybrid vehicles.

4. A higher resale value can be achieved by selling compact and midsize vehicles with less than 100,000 miles on the odometer.

Recommendations

The San Mateo County Civil Grand Jury recommends that the Board of Supervisors:

1. Commission a new study of the total cost of ownership, including depreciation, comparing hybrid and other alternative fuel vehicles with conventional “green” vehicles.

2. Utilize the results of the new study to revise, if necessary, the current vehicle purchasing policy. While there are many considerations, any decision should be based on a full understanding of all costs involved.

3. Develop a new policy for vehicle retirement based on mileage accumulation as the primary determinant rather than the current policy of 100,000 miles or 7 years, whichever comes first.

Exhibit A

Compact Conventional and Hybrid Vehicles						
Year	Mfg	Type	Model	Base Price $	Trade In Value (est) $	Net Cost Savings from Conventional
2002	Toyota	Hybrid	Prius	20,480	4,225	
		Conventional	Corolla S	14,073	3,400	
	Price/Trade In Value Difference			6,407	825	5,582
	Honda	Hybrid	Insight	21,740	5,325	
		Conventional	Civic LX	15,550	3,425	
	Price/Trade In Value Difference			6,190	1,900	4,290
2003	Toyota	Hybrid	Prius	20,730	5,025	
		Conventional	Corolla S	15,165	3,925	
	Price/Trade In Value Difference			5,565	1,100	4,465
	Honda	Hybrid	Civic	19,990	4,500	
		Conventional	Civic LX	15,670	4,150	
	Price/Trade In Value Difference			4,320	350	3,970
2004	Toyota	Hybrid	Prius	20,510	6,600	
		Conventional	Corolla S	15,030	5,175	
	Price/Trade In Value Difference			5,480	1,425	4,055
	Honda	Hybrid	Civic	20,140	5,400	
		Conventional	Civic LX	15,850	5,000	
	Price/Trade In Value Difference			4,290	400	3,890
2005	Toyota	Hybrid	Prius	21,515	8,175	
		Conventional	Corolla S	15,430	5,750	
	Price/Trade In Value Difference			6,085	2,425	3,660
	Honda	Hybrid	Civic	20,315	6,725	
		Conventional	Civic LX	16,025	6,375	
	Price/Trade In Value Difference			4,290	350	3,940
2006	Toyota	Hybrid	Prius	22,305	10,000	
		Conventional	Corolla S	15,755	6,650	
	Price/Trade In Value Difference			6,550	3,350	3,200
	Honda	Hybrid	Civic	23,195	10,550	
		Conventional	Civic LX	17,555	9,325	
	Price/Trade In Value Difference			5,640	1,225	4,415
2007	Toyota	Hybrid	Prius	22,755	11,600	
		Conventional	Corolla S	15,830	8,000	
	Price/Trade In Value Difference			6,925	3,600	3,325
	Honda	Hybrid	Civic	23,195	10,550	
		Conventional	Civic LX	17,555	9,325	
	Price/Trade In Value Difference			5,640	1,225	4,415
2008	Toyota	Hybrid	Prius	22,985	13,000	
		Conventional	Corolla S	16,110	8,775	

Compact Conventional and Hybrid Vehicles						
Year	Mfg	Type	Model	Base Price $	Trade In Value (est) $	Net Cost Savings from Conventional
	Price/Trade In Value Difference			6,875	4,225	2,650
	Honda	Hybrid	Civic	23,235	12,050	
		Conventional	Civic LX	17,595	10,600	
	Price/Trade In Value Difference			5,640	1,450	4,190
2009	Toyota	Hybrid	Prius	24,035	14,000	
		Conventional	Corolla S	17,310	8,900	
	Price/Trade In Value Difference			6,725	5,100	1,625
	Honda	Hybrid	Civic	24,320	13,300	
		Conventional	Civic LX	18,125	11,550	
	Price/Trade In Value Difference			6,195	1,750	4,445
2010	Toyota	Hybrid	Prius	22,150	16,450	
		Conventional	Corolla S	17,470	10,200	
	Price/Trade In Value Difference			4,680	6,250	(1,570)
	Honda	Hybrid	Civic	24,510	14,350	
		Conventional	Civic LX	18,315	12,550	
	Price/Trade In Value Difference			6,195	1,800	4,395

SUV Conventional and Hybrid Vehicles						
Year	Mfg	Type	Model	Base Price $	Trade In Value (est) $	Net Cost Savings from Conventional
2005	Ford	Hybrid	Escape	28,595	8,575	
		Conventional	Escape	22,045	6,800	
	Price/Trade In Value Difference			6,550	1,775	4,775
2006	Ford	Hybrid	Escape	29,140	10,400	
		Conventional	Escape	22,435	8,425	
	Price/Trade In Value Difference			6,705	1,975	4,730
2007	Ford	Hybrid	Escape	27,925	12,350	
		Conventional	Escape	22,515	10,100	
	Price/Trade In Value Difference			5,410	2,250	3,160
2008	Ford	Hybrid	Escape	27,680	15,750	
		Conventional	Escape	22,175	12,800	
	Price/Trade In Value Difference			5,505	2,950	2,555
2009	Ford	Hybrid	Escape	30,750	17,750	

Compact Conventional and Hybrid Vehicles						
Year	**Mfg**	**Type**	**Model**	**Base Price $**	**Trade In Value (est) $**	**Net Cost Savings from Conventional**
		Conventional	Escape	23,370	14,350	
	Price/Trade In Value Difference			7,380	3,400	3,980