



City of Richmond

Report to Committee

To: Public Works & Transportation Committee **Date:** January 20, 2006 *to Public Works & Transportation - Feb 15, 2006*

From: Dave Semple **File:** 02-0780-01
 Director of Parks Operations & Public Works Operations

Re: **Amendment to Report on Hybrid Electric Pilot to include "Smart Car Technology"**

Staff Recommendation

That the City amend the purchase procedure of Hybrid Electric Vehicles fleet vehicles to include "Smart Car Technology."

Dave Semple
 Director of Parks Operations & Public Works Operations
 (3350)
 Att.

FOR ORIGINATING DIVISION USE ONLY					
ROUTED TO:		CONCURRENCE		CONCURRENCE OF GENERAL MANAGER	
Budgets		Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		(ACTING)	
REVIEWED BY TAG		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		REVIEWED BY CAO	
				YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	

Staff Report

Origin

At the February 28, 2005 Council Meeting, Council approved that the City of Richmond purchase Hybrid Electric Vehicles rather than standard compact vehicles. Since then new technology like the Smart Car has come forward which should be included as alternative vehicles. This report deals with asking Council to include "Smart Car Technology" along with the Hybrid Vehicle Technology when purchasing small cars for the City.

Analysis

With the success of the Hybrid Electric Vehicle program, staff have been test driving the diesel fuelled "Smart Cars" provided by local dealerships, in consideration of including the latest technologies available into the City Fleet.

The Smart Car Technology (see Attachment 1) allows a new dimension for City use. Its compact size combined with its ability to use bio-diesel make this a competitive alternative for consideration.

Vehicle dimensions are 2.5 meters long and 1.5 meters wide, enabling two vehicles to fit side by side in a standard parking lot stall. This will contribute positively to traffic management/congestion issues and will provide much needed additional parking capacity for residents and visitors to the City of Richmond.

In summary, when combined, size, alternative fuel, and cost, the Smart Car Technology has an effective function in many departments where cars are required.

Financial Impact

Smart Car purchases will cost the City up to \$23,000 all in (taxes included) and can be funded through the Equipment Replacement Reserve – Public Works Vehicles. This compares with \$40,000 all in (taxes included) for hybrid vehicles. The annual operating cost for a Smart Car is approximately \$1,735. The annual operating cost for a Hybrid vehicle is approximately \$2,900.

Future purchases will form part of the Public Works Vehicle Replacement plan funded from the Equipment Replacement Reserve – Public Works Vehicles. Vehicle rates will be adjusted to recover all costs associated with ownership and operation of Smart Cars.

Vehicle Type	Annual Fuel	Annual Maintenance	Annual Insurance
Toyota Hybrid	\$960	\$475	\$1,505
Honda Hybrid	\$970	\$293	\$1,577
SMART Car	\$314	\$200	\$1,221

Conclusion

After test driving the Smart Car for several months, and positive reviews from those testing the vehicles, City staff recommend the City of Richmond include Smart Cars in its decision to utilize alternative vehicles in an effort to reduce green house gases. Low vehicle pricing combined with fuel cost savings through use of diesel and small size support the City of Richmond's "green" initiatives.



Dave Semple
Director of Parks Operations & Public Works Operations
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Smart Cars

The Smart Car engine is a 3-cylinder 800cc turbo diesel and depending on driving style will get approximately 350 to 500 kms per tank. The fuel tank holds 22 litres of fuel (including a 5 litre reserve) - costing approximately \$20 dollars to fill the tank. Diesel gas stations are widely available in Vancouver and the Lower Mainland.

Driver, passenger and side airbags are standard equipment. The car is built with cell technology, where the rigid cell is virtually impenetrable – it's made of HSLA steel which is 300% stronger than other steel. The tires are located at the outer edge of the safety cell, on a shorter wheelbase. They absorb the initial impact of a collision and protect the vehicle's occupants. The rest of the energy is then dissipated throughout the safety cell and remitted back on the crumple zones of the other vehicle.

The vehicle has a 6 speed semi-automatic transmission with a digital display which instructions you when to manually up-shift (the car down-shifts for you). Without use of a clutch, the smart is easy for drivers of all different levels of experience. There is also an automatic transmission option available. The top speed is 135km/hr, making the car suitable for highway driving. The vehicle engine is mounted in the rear, and it is rear wheel drive, allowing the vehicle to have more weight over the back tires. This allows the car to handle better in the snow. The Smart car is equipped with ABS brakes to assist in icy conditions.