Gordon Wozniak
Councilmember District 8

CONSENT CALENDAR
December 18, 2007

To: Honorable Mayor and Members of the City Council

From: Mayor Tom Bates and Councilmember Gordon Wozniak

Subject: Energy Efficient Parking Enforcement Vehicles

RECOMMENDATION

Direct the City Manager to investigate the feasibility of replacing Interceptor parking enforcement vehicles with electric low-speed vehicles (LSVs) or energy efficient high mileage vehicles. If replacement is deemed feasible, it is recommended that test vehicles be purchased as prototypes before a phased replacement of the existing fleet begins. The City Manager should report back to the Council with his recommendations by the end of March 2008. If such a replacement is feasible this would result in a substantial reduction in CO_2 emissions from the enforcement fleet and a substantial savings of taxpayer dollars.

FINANCIAL IMPLICATIONS

LSVs are priced in the range of $10,000 to $14,000. If Interceptors were phased out and replaced with LSVs there would be a savings of $13,000 to $17,000 per vehicle, depending on the vehicle selected. Additional operational savings would be realized since electric engines are substantially more reliable and require relatively little maintenance compared to internal combustion engines.

BACKGROUND

With the advent of recent improvements in electric car technology, several electric Low-Speed Vehicles (LSVs) are attractive options to help Berkeley achieve its Measure G goals in emission reductions. LSVs are well suited to stop-and-go driving and for routes driven at low speeds. The cars recharge overnight and offer a range of 25 to 40 miles. There are several models of LSVs now on the market, with prices ranging $10,000 to $14,000, a significant cost savings over the currently used Interceptor, at approximately $27,000. In addition, LSVs would reduce costs for both purchase and maintenance of the vehicle fleet. Please see attachment for specifications.

Alternatively, new hybrids and new high mileage vehicles are available that would achieve similar savings. Please see attachment for specifications.

The City of Berkeley currently purchases and maintains a fleet of Interceptor Go-4s. The Go-4 has several advantages including narrow width for maneuverability and good visibility. However, Go-4s are expensive to purchase, replace, and maintain, and they

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rely on internal combustion engines that when idling or running at low speeds are not energy efficient.

Costs associated with the Interceptor Go-4:

- Capital cost per vehicle: $26,987 (Source: City Council Agenda; Item 18 "Purchase Order: Parking Enforcement Vehicle," June 26, 2007)
- Maintenance: costly to fuel and repair
- Cost to environment: internal combustion engines are inefficient and a substantial source of $C0_2$ emissions

The council recently approved the purchase of fourteen Interceptor Go-4 vehicles. Therefore, it may be appropriate to purchase one or more energy efficient vehicles as test cases, for a thorough evaluation, before replacing the existing fleet.

CONTACT PERSON

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Mayor Tom Bates	510-981-7100

Attachments:
1: Specifications of Current Interceptor Go-4 Parking Enforcement Vehicle and Energy Efficient Vehicles

Specifications of Current Interceptor Go-4 Parking Enforcement Vehicle and Energy Efficient Vehicles

Current Vehicle: Interceptor Go-4

Costs associated with the Interceptor Go-4:

Capital cost per vehicle: $26,987 (Source: City Council Agenda; Item 18 "Purchase Order: Parking Enforcement Vehicle," June 26, 2007)
Maintenance: costly to fuel and repair
Cost to environment: internal combustion engines are inefficient and a substantial source of $C0_2$ emissions

Interceptor Go-4 specs:

Overall height with cab	69.5"
Overall length	118"
Overall width	52.5"
Wheelbase	78.5"

A hybrid Go-4 would be an attractive solution; however the company that makes these vehicles has a low volume of sales (around 500/year) so there is little incentive to develop such technology for such a specialized market. In addition, the cost of the vehicle could be expected to go up rather than down.
(Source: http://mspace.lib.umanitoba.ca/bitstream/1993/2843/1/Design%20Simulation%20and%20Construction%20of%20a%20Series%20Hybrid%20Electric%20Vehicle.pdf)

Energy Efficient Vehicles:

Low Speed Vehicles
1. ZENN Car
2. 2. Gem Car
3. 3. Zap

Hybrid
4. Concept Chevy Volt

High mileage internal combustion
5. Smart Car

1. ZENN Car

Low Speed Vehicle
www.zenncars.com/
Berkeley dealership: http://www.gogreenmotors.com/

Advantages:
- Zero emissions.
- No noise.
- Narrow width; maneuverable on narrow streets
- Safety tested: steel reinforced body.

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- (From Zenn web site): "...Eliminates the replacement and repair costs of oil changes, oil filters, exhaust system and expensive tune-ups associated with internal combustion engines.
- (From Zenn web site): "Brake wear...limited due to...lower driving speed and regenerative braking feature."
- City would be supporting a new business (car dealer) located in Berkeley.
- Propose overnight recharging, in facility fitted with solar panels, as a demonstration project showcasing Berkeley's new solar financing district program.

Price: approx. $13-14K
Street legal as LSV
Maximum speed 25 mph
Range: approximately 35 miles.

Length	120.8'
Height	55.9"
Width	58.8"
Wheelbase	81.8"

2. Gem Car
Low Speed Vehicle / E2 model
www.gemcar.com/

- This car has features similar to the ZENN car, with the exception that these cars are available through Chrysler; thus there is no Berkeley business tie-in.

Price: approx. $10K
Street legal as LSV
Maximum speed 25 mph
Range: approximately 30 miles

Length	99"
Height	70"
Width	55"
Wheelbase	72"

3. Zap Car
Low Speed Vehicle / Xebra Sedan
www.zapworld.com

Price: approx. $10,500K
Street legal as LSV
Maximum speed 40 mph
Range: approximately 25 miles

Length	114.2”
Height	60.6”
Width	55.9”
Wheelbase	Unknown

4. Concept Chevy Volt
Plug-in Hybrid
http://www.chevrolet.com/electriccar/

Price: not published
Plug-in Hybrid: 150 mpg
Maximum speed 120 mph
Range: approximately 40 miles on batteries, 640 miles on gas or E85 ethanol

5. Smart Car
Internal combustion, high fuel efficiency.
www.smartusa.com

- Available in 2008; reservations are being taken now on the web site.

Price: approx. $13-14K
Fuel efficiency: 40mpg
5-speed automatic transmission
Electronically limited to 90 mph
Range: unknown

Overall height with cab	61"
Overall length	104"
Overall width	61"
Wheelbase	Unknown