REPORT TO COUNCIL
City of Sacramento

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CONSENT
May 4, 2006

Honorable Mayor and
Members of the City Council

Subject: Report Back On Emergency Vehicle Pre-Emption (PN: SL56)

Location/Council District:

Citywide -The locations for the pilot project were: Truxel Road/Natomas Boulevard from Garden Highway to Elkhorn Road; Del Paso Road/Main Avenue from Marysville Boulevard to East Commerce Parkway; Mack Road/Meadowview Road from Highway 99 to Interstate 5; Franklin Boulevard from the south City Limits to 12th Avenue. (Districts 1, 2, 4, 5, 7 and 8)

Recommendation: For Council information only. Recommendations will be presented to Council with budget at a later date for adoption.

Contact: Don Mashburn, Captain, (916) 433-0775; JD Bamfield, Senior Engineer, 808-5904; Angie Louie, City Traffic Engineer, 808-7921

Presenters: None

Department: Fire and Transportation

Division: Fire Suppression and Engineering Services

Organization No: 2532 and 3439

Summary:

This report recognizes the success of the pilot project for the emergency vehicle pre-emption system. Along the demonstration corridors, response effectiveness has been improved and response times are reduced. Controlled tests of the Emergency Vehicle Pre-Emption System (EVPS) displayed reduced response times with savings between 96 seconds and 150 seconds per test. This represents more than a 15 percent reduction in response time for each test run. At the same time, fewer collisions occurred nationally involving emergency vehicles in EVPS equipped intersections. When collisions are reduced, public and employee safety increases and fire equipment operator stress lowers. All are benefits of EVPS.

Committee/Commission Action: None

Background Information:

EVPS is a traffic signal override system that allows vehicles with emitters to communicate with traffic signals. The emitter informs the signal of its presence. The signals' computer then starts a safe process for ending the existing signal phase and cycles the signal to give, or extend, the green light for the approaching safety vehicle.

The installation of the EVPS demonstration equipment was completed on Truxel Road/Natomas Boulevard from Garden Highway to Elkhorn Road and on Del Paso Road/Main Avenue from Marysville Boulevard to East Commerce Parkway in the north areas of Sacramento in May 2004. In the south areas, EVPS was completed on Mack Road/Meadowview Road from Highway 99 to Interstate 5 and on Franklin Boulevard from the south City Limits to 12th Avenue in October 2004. Sixty-seven intersections were equipped at a cost of $633,621.

Pilot Program Results:

Compelling reasons for installing and activating an EVPS are the reduction of response/run times and improved public safety. By permitting emergency vehicle drivers to request and receive green lights as they respond to the scene, the EVPS provides fire equipment with the ability to shave valuable seconds off response times. Both the first arrival emergency vehicles and also secondary units receive this benefit. The Police Department will also be able to utilize the EVPS system by installing emitters on emergency response vehicles.

The corridors selected for the pilot project were based on addressing those with the longest average response times first. After installation of the EVPS, Fire Department staff conducted a number of controlled test runs to compare response times with and without EVPS. The results are as follows:

RESULTS OF CONTROLLED TEST RUNS

APPARATUS	FROM	TO	*WITHOUT* EVPS (min:sec)	*WITH* EVPS (min:sec)	CHANGE (min:sec)
Engine 15	Station 15	1850 Club Center Dr.	10:30	8:20	2:10 decr
Truck 17	Station 17	Station 30 (1901 Club Center Dr.)	11:15	8:45	2:30 decr
Engine 18	Station 18	1850 Club Center Dr.	8:22	6:26	1:56 decr
Truck 7	Station 7	2163 Meadowview Rd.	6:58	5:22	1:36 decr

The controlled test results demonstrate that, under many circumstances, the EVPS can provide substantial decreases in travel time for emergency response vehicles. The system's ability to seize and hold a green light for the emergency vehicle is instrumental in reducing response time. Furthermore, the number of collisions involving fire apparatus is expected to decrease, as is the associated costs of worker's compensation and liability claims.

Recommended Expansion of EVPS:

There are approximately 750 signal locations in the City of Sacramento. For the pilot project, EVPS was installed at 67 of these locations. The fire department has identified 300 additional locations in need of EVPS and, of these locations, 170 are located on 13 high priority corridors. The goal is to install EVPS at these 170 locations in the near future.

The 13 "high priority" corridors are, in order, as follows:

	Corridor	from	to	Number of Installations	Council District
1	Freeport Blvd	Broadway	Meadowview	14	4, 5, 7 & 8
2	Broadway	3rd St	65th St Expressway	17	4, 5 & 6
3	Del Paso Blvd / Marysville Rd	SR 160	City limit	17	1, 2 & 3
4	Grove / Norwood	Del Paso Blvd	Main Ave	12	2
5	Fruitridge Rd	S. Watt Av	Interstate 5	19	4, 5 & 6
6	Florin Road	Riverside Av	65th St Expressway	12	4, 7 & 8
7	Northgate Blvd	Arden-Garden	Del Paso Rd	11	1
8	Folsom Blvd	Watt Ave	Alhambra Blvd	17	3 & 6
9	W. El Camino Blvd	I-5	Business 80	17	1, 2 & 3
10	29th St	T St	E St	10	3 & 4
11	30th St	T St	E St	10	3 & 4
12	Arden- Garden	Howe Ave	Gateway Oaks	12	1, 2 & 3
13	Richards Blvd	Dos Rios	I-5	8	1

The above corridors are identified by the Fire Department as priority for the following reasons:

- Corridors identified are noted as high usage by multiple stations.
- Corridors enhance Fire Department medic units and ambulances with better, faster and more reliable response routes to local hospitals.
- Corridors create an interconnected, cross grid for the fire companies to use when combined with the four original pilot corridors.

- Corridors provide balance and reliability for emergency response throughout the City enabling fire stations to better support one another.

Since the completion of the four demonstration corridors with the longest response times, no particular corridor stands out as having excessively high response times. Therefore, response times were not used as a primary factor for prioritizing these corridors.

At this time staff is evaluating plans for the ongoing installation of EVPS. One option being considered for implementation is an EVPS lease-purchase plan.

Financial Considerations:

The cost to implement the pilot project for EVPS was $633,621 and funded using redirected Measure A funds. Thirty-one north area and thirty-three south area signals (plus three more in coordination with County) were equipped with EVPS in the pilot project.

On January 17, 2006, Council approved the FY 06/07 Measure A Expenditure Plan that includes $150,000 for EVPS installation projects. DOT intends to recommend a supplement of $50,000 in the 06/07 Capital Improvement Program for a total of $200,000. These funds will be used in accord with the recommendations of this report. Additional funding for ongoing EVPS will also be evaluated as part of the annual transportation Capital Improvement budget process with the intent of funding this program at $200,000 annually. It is also expected that EVPS improvements will continue to occur with private development and capital improvement projects.

Environmental Considerations:

The Development Services Department, Environmental Planning Services Division has reviewed the EVPS Program and has determined that the project is exempt from the provisions of CEQA (The California Environmental Quality Act) under Class 1, Section 15301(c) and Class 2, Section 15302(c) of the CEQA Guidelines. Projects exempted under Class 1, Section 15301(c), consist of the operation, repair, or minor alteration of existing highways, streets, sidewalks, gutters, bicycle and pedestrian trails, and similar facilities involving negligible or no expansion of use. Projects exempted under Class 2, Section 15302(c), consist of the replacement or reconstruction of existing utility systems and/or facilities involving negligible or no expansion of use.

Policy Considerations:

This proposal meets the City's strategic plan goals to improve public and employee safety by providing safe and reliable streets that safely accommodate emergency services.

Emerging Small Business Development (ESBD):

Any goods and services will be procured in accordance with established City policy.

Respectfully Submitted by: _____
Nicholas Theocharides
Engineering Services Manager

Approved by: _____
Jerry Way
Interim Director, Department of Transportation

Approved by: _____
Julius J. Cherry
Fire Chief

Recommendation Approved:

_____
RAY KERRIDGE
City Manager

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