



Los Angeles Fire Department

TRAINING BULLETIN

DOUGLAS L. BARRY, Fire Chief / Bulletin No. 133 / Date of Issue: 10/2008

TRAFFIC SIGNAL PREEMPTION SYSTEM FOR EMERGENCY VEHICLES

Los Angeles Fire Department (LAFD) in collaboration with the Los Angeles Department of Transportation (LADOT) has developed a system that automatically turns traffic lights green for emergency vehicles traveling on designated streets in the City. The LADOT Fire Preemption System (FPS) will reduce fire response times and improve public safety when emergency vehicles are passing through intersections.

The FPS is based on the existing Transit Priority System (TPS) infrastructure. The LAFD is installing transponders on all emergency response vehicles. In January 2008, the first FPS route located on Broadway was activated and all 27 Metro Rapid Bus routes will be configured for fire preemption by July 2010.

Preemption causes the traffic signal to immediately begin clearing pedestrians from all crosswalks with flashing "DON'T WALK" indications. The traffic signal will cycle and turn green for emergency vehicles, as soon as the pedestrian clearing time ends and stays green until the vehicle passes through, while cross-traffic gets a red signal. Drivers of all emergency apparatus must use caution as pedestrians may still cross on "DON'T WALK" warning.

Each emergency vehicle is outfitted with a radio transponder which broadcasts a unique signal dedicated to the shop number of each apparatus that is detected by low voltage loop system embedded in the roadway just before crosswalks. These signals are carried through the LADOT Control Center, where TPS software tracks the location of the apparatus, determines its direction of travel and activates the preemption mode for the upcoming traffic signals along the route.

FPS is able to trigger multiple traffic signals in advance for oncoming emergency vehicles, giving them a series of green lights. An indication that the system is working properly is that the "DON'T WALK" indicator will flash in all four directions. Drivers must follow the Department's approved driving policy, and not anticipate or rely on the response of the FPS on affected intersections. The FPS will be based upon posted speed limits. This feature will reduce LAFD on-scene response times when the apparatus travel is on these designated streets. The FPS also provides LAFD with a central monitoring system to track its emergency vehicles in real time.

Transponder Specifications

- Transponder is securely mounted 12 to 18 inches above the ground in front bumper of apparatus to trip loops.
- Apparatus must hit at least two loops (street lights), to activate priority system.
- Apparatus can now be tracked by LADOT Control Center.
- Transponders are rig specific, identified by shop number, which trips FPS software whenever emergency lights/Master switch is activated.
- Drivers must continue to abide by the Departments approved driving standards and policy.
- System is active until apparatus turns off designated route and then two loops must be tripped again in order to continue with preemption.
- Apparatus must not exceed posted speed limit. It will defeat software and red lights will be encountered.
- Distances of activation may be determined by frequency of stoplights.
- Maintenance - transponder should be checked on Monday morning for mounting and wire status.
- DRIVERS MUST MAINTAIN AWARENESS OF POSSIBLE CONFUSION BY CIVILIANS. PEDESTRIANS MAY NOT FOLLOW SIGNAL DISPLAY OF "DON'T WALK", AND ENTER CROSSWALK WHEN LIGHT IS GREEN FOR APPARATUS PREEMPTION. CIVILIAN DRIVERS MAY BE CONFUSED OF RAPID CHANGE OF SIGNALS DUE TO FPS CHARACTERISTICS.

Fire Preemption System Routes							
No.	TPS Route	Street	Dir.	North/West Limit	South/East Limit	LG (mi)	Date
1	Broadway	Broadway	N/S	Cesar Chavez Ave.	Imperial Hwy.	9.5	Jan-08
2	Ventura	Ventura Ave.	E/W	Topanga Cyn.	Riverton Ave.	14.2	Feb-08
		Topanga Cyn.	N/S	Erwin St.	Ventura Ave.	1.0	
3	Vermont	Vermont Ave.	N/S	Los Feliz Blvd.	105 Fwy. E/B Off Ramp	12.5	Mar-08
4	Beverly	Beverly Blvd./1st St.	E/W	La Cienega Blvd.	Olive St.	7.9	Apr-08
		Grand Ave.	S	1st St.	18th St	1.8	
		Olive Ave.	N	1st St.	18th St	1.8	
5	Sepulveda North	Brand Blvd.	E/W	Sepulveda Blvd.	Laurel Canyon Blvd.	1.1	May-08
		Sepulveda Blvd.	N/S	Brand Blvd.	Church Ln.	14.9	
6	Hollywood-Fairfax	Colorado Blvd.	E/W	Broadway	Figueroa St.	2.2	Aug-08
		Los Feliz Blvd.	E/W	Vermont Ave.	Seneca Ave.	2.1	
		Hollywood Blvd.	E/W	Fairfax Ave.	Vermont Ave.	4.0	
		Fairfax Ave./La Cienega Blvd.	N/S	Willoughby Ave.	Rodeo Rd.	4.7	
7	Pico	Pico Blvd.	E/W	Centinela Dr.	Crenshaw Blvd.	7.8	<i>Sep-08</i>
8	Manchester	Manchester Blvd.	E/W	Truxton Ave.	Bellanca Ave.	0.8	<i>Sep-08</i>
		Manchester Blvd.	E/W	Van Ness Ave.	Central Ave.	3.5	
9	Soto	Daly St./Marengo St.	N/S	Avenue 26	Soto St.	1.9	<i>Sep-08</i>
		Soto St.	N/S	Marengo St.	Washington Blvd.	2.8	
10	Olympic	Olympic Blvd.	E/W	Bedford St.	Olive St.	7.2	<i>Oct-08</i>
11	San Fernando-Lankershim	San Fernando Rd.	N/S	Fox St.	Lankershim Blvd.	4.2	<i>Nov-08</i>
		Lankershim Blvd.	N/S	San Fernando Rd.	Chandler Blvd.	4.6	
12	Crenshaw-Rossmore	Rossmore Ave./Vine St.	N/S	Hollywood Blvd.	Wilshire Blvd.	2.8	<i>Dec-08</i>
		Crenshaw Blvd.	N/S	Wilshire Blvd.	76th St.	6.5	
13	Reseda	Reseda Blvd.	N/S	Devonshire St.	Ventura Blvd.	6.1	<i>Jan-09</i>
14	Santa Monica	Santa Monica Blvd.	E/W	Centinela Ave.	Moreno Dr.	3.6	<i>Feb-09</i>
		Santa Monica Blvd.	E/W	Orange Dr.	Sunset Blvd.	3.5	
15	Sepulveda South	Sepulveda Blvd.	N/S	Wilshire Blvd.	Venice Blvd.	3.6	<i>Mar-09</i>
16	Long Beach	7th St.	E/W	Broadway	Santa Fe Ave.	1.6	<i>Mar-09</i>
		Santa Fe Ave.	N/S	7th St.	15th St.	0.9	

No.	TPS Route	Street	Dir.	North/West Limit	South/East Limit	LG (mi)	Date
17	Central	Central Ave.	N/S	6th St.	Imperial Hwy	7.9	<i>Apr-09</i>
18	Lincoln	Lincoln Blvd.	N/S	Rose Ave.	Sepulveda Blvd.	5.6	<i>May-09</i>
19	Sunset-Chavez	Sunset Blvd./Cesar Chavez Blvd.	E/W	Santa Monica Blvd.	Evergreen Ave.	6.1	<i>Jun-09</i>
20	La Cienega-Vernon	La Cienega Blvd.	N/S	Olympic Blvd.	Cadillac Ave.	1.5	<i>Jul-09</i>
		Rodeo Rd.	E/W	La Cienega Blvd.	M. L. King Jr. Blvd.	1.1	
		Vernon Ave.	E/W	Crenshaw Blvd.	Alameda St.	5.3	
21	San Fernando South	San Fernando Rd./Avenue 26	N/S	Treadwell St.	Figueroa St.	3.0	<i>Aug-09</i>
		Hill St.	N/S	College St.	Olympic St.	2.0	
22	Western	Western Ave.	N/S	Hollywood Blvd.	108th St.	11.3	<i>Sep-09</i>
23	Van Nuys-Westwood	Van Nuys Blvd.	N/S	Foothill Blvd.	Ventura Blvd.	10.2	<i>Oct-09</i>
		Sunset Blvd.	E/W	Church Ln.	Hilgard Ave.	2.1	
		Hilgard Ave.	N/S	Sunset Blvd.	Le Conte Ave.	1.1	
24	Florence	Florence Ave.	E/W	Crenshaw Blvd.	Central Ave.	4.3	<i>Nov-09</i>
25	M. L. King	M. L. King Jr. Blvd.	E/W	Rodeo Rd.	Broadway	4.5	<i>Dec-09</i>
26	Wilshire-Whittier	Wilshire Blvd.	E/W	Centinela Ave.	Whittier Dr.	4.0	<i>Jan-10</i>
		Wilshire Blvd.	E/W	San Vicente Blvd.	Valencia St.	6.1	
		6th St./Whittier Blvd.	E/W	Valencia St.	Indiana St.	5.0	
		5th St.	W	Beaudry Ave.	Central Ave.	1.4	
TOTAL =						205.1	