

## Memorandum

To: DISTRICT DIVISION CHIEFS  
Maintenance and Operations

Date: March 21, 2001

File:

From: DEPARTMENT OF TRANSPORTATION  
Traffic Operations  
Maintenance Program

Subject: Deploying Battery Back-up Systems at Traffic Signalized Intersections

This memo supersedes the August 2, 2000 memo to the District Division Chiefs of Maintenance (attached). The memo addressed red Light Emitting Diodes (LEDs) and battery back-up systems (BBS) that would only allow for red flash in the event of a power failure. This memo is to request a priority list of traffic signals to be retrofitted with full color LED modules and to install BBS. This memo is signed jointly by the Maintenance and Traffic Operations Programs.

Based on the current ongoing energy crisis and the potential for an increase in demand during the hotter months, (resulting in rolling blackouts), there is an immediate need to retrofit traffic signals with LED modules of all colors and install BBS. Every effort should be made to coordinate the installation of BBS, prior to the summer months, as soon as the LED retrofits are complete. This coordinated effort should include additional prioritization of locations retrofitted with BBS (after installation of full color LED modules).

Installing battery backup systems (BBS) will provide the ability for traffic signals (with full color LED modules) to be fully operational during times of power failures or rolling blackouts. During power outages, these systems, by operating normally, provide improved traffic control, safe operation, and reduce delays and congestion. During times of blackouts these systems will also assist emergency response equipment such as fire, police, and ambulance by continuing to provide Emergency Vehicle Preemption at traffic signals.

The traffic signal should be retrofitted with LED modules prior to installing any BBS. Presently, the Maintenance and Traffic Operations Program are involved in a statewide project to retrofit all traffic signals with all colors of LED modules. This conversion will not only provide considerable energy savings but also provide the opportunity to implement full operation BBS. Estimated completion date of this LED retrofit project is June 30, 2001.

DISTRICT DIVISION CHIEFS

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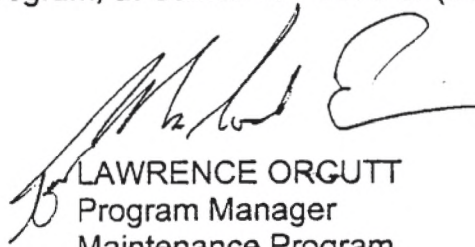
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Your District is requested to develop a plan for the implementation of these systems. This plan will establish an organized and standardized approach to the implementation and deployment of these systems and should represent the priorities of the individual district in accordance with the attached guidelines. Each district should provide:

- A list of intersections where BBS will be installed under priority one.
- A schedule showing when these locations will be ready for BBS (anticipating that all LED retrofit are completed by June 30, 2001).
- A schedule showing when locations under priority two will be ready for BBS retrofit.
- Resource needs (personal service dollars, overtime, etc.) if this work is to be done by state forces.

Districts should submit their list of prioritized traffic signals and implementation schedule to Gonzalo Gomez by April 13, 2001. Any questions or comments can be directed to Gonzalo Gomez, Maintenance Program, at Calnet 464-2461 or (916) 654-2461 or Jesse Bhullar, Traffic Operations Program, at Calnet 464-5975 or (916) 654-5975.

  
JOSEPH HECKER  
Acting Program Manager  
Traffic Operations

  
LAWRENCE ORGUTT  
Program Manager  
Maintenance Program

Attachment



## Guidelines

### Battery Backup System Deployment Prioritization

#### Priority 1

To be installed immediately following LED retrofit (before mid-summer if possible)

- Single Point Interchanges
- All intersections with high speed approach (over 45 MPH)
- Traffic signals that are part of a corridor (conventional highway or non-freeway) that function as a major arterial in urbanized areas
- Signals that are part of a coordinated system

#### Priority 2

To be installed following priority 1 (before end of summer if possible)

- Any intersection that meets two or more of the site selection factors listed below

#### Priority 3

To be installed after priority 1 and 2 locations have been completed

- All remaining locations

Site selection factors include:

1. Areas with frequent limited visibility such as fog, dust, etc.
2. Isolated rural intersections
3. Response time is over 40 minutes
4. Locations with a history of power outages
5. Type of traffic (tourists may not be familiar with the area)
6. *Changing highway environment from a rural, high-speed highway to a developed urbanized area.* Evaluation of the intersection may require inspection by the District Traffic Engineer and the Electrical Maintenance Representative.

Other locations and considerations that could enhance the safety of intersection and agreed upon by the District Traffic Engineer and the Electrical Maintenance Representative may also be included.