



Staff Report

DISCUSSION AND DIRECTION REGARDING ALTERNATE POWER SOURCES FOR TRAFFIC CONTROL DEVICES

Honorable Mayor and Council Members:

Summary

In response to multiple power outages in Belmont, staff recommends considering emergency back-up power systems for traffic control devices along major thoroughfares.

Background

On July 21, 2008 at approximately 4:00 p.m. the City of Belmont experienced a wide spread power outage. Power was lost throughout Belmont from Alameda de las Pulgas east. The city hall facility was effected, though limited power was available via the emergency generator. This event lasted just over two hours.

Traffic control was a serious problem during this event. At the outset, traffic lights at El Camino Real and Ralston Avenue went to flashing red, while the lights at Ralston Avenue and 6th Avenue were out completely, and lights at Ralston Avenue and Alameda de las Pulgas went to flashing red. Also the lights at El Camino Real and Harbor Boulevard went to flashing red. All of this taxed our already busy patrol staff to its limits. Traffic on lower Ralston Avenue quickly came to a standstill and we determined that Ralston Avenue and El Camino Real required manual controls. Two Community Service Officers were held over from their normal shifts and began manually directing traffic at that intersection for almost two hours. It soon became clear that traffic direction would also be necessary at 6th Avenue and Ralston Avenue due to its proximity to El Camino Real. A Traffic Officer was held over from his normal shift and took over manually directing that intersection as well. There were insufficient personnel to direct traffic at Alameda de las Pulgas and Ralston Avenue.

On August 28, 2008 at approximately 5:00 p.m. the City of Belmont experienced another wide spread power outage along Old County Road and pockets along Ralston Avenue to Cipriani Boulevard. Once again, drive-time traffic was a serious concern. Traffic controls were completely out on Ralston Avenue at Old County Road and at Cipriani Boulevard. Officers who were booking prisoners and conducting investigations had to be rushed back to direct traffic. This event lasted just under two hours.

Discussion

These are a few of the most recent examples of this long-standing issue. Staff has gathered at the direction of the City Manager to discuss long-term solutions. In addition to our work with Pacific Gas and Electric, the idea of emergency back-up power systems has been discussed.

These two events forced the Police Department to halt all enforcement and investigations and redeploy our minimal resources solely to the very dangerous task of manually directing traffic. Though the California Vehicle Code (§ 21800 et.al.) mandates that drivers treat these uncontrolled intersections as four-way stops, the reality is that this is often insufficient. Instead, confused and frustrated motorists often do not stop, creating traffic congestion and dangerous situations.

The Public Works Department has done some preliminary review of the issue and determined that the technology exists to provide traffic control signals with emergency battery back-up power systems that would provide power for a limited time (2-4 hours) during a power outage.

With the knowledge there may be a back-up power system available, staff set out to identify those intersections that would be most in need of back-up power. There are currently fifteen intersections controlled by signal lights within the Belmont city limits. Of those, nine fall along Ralston Avenue (Hiller Street, Old County Road, Sixth Avenue, Alameda de las Pulgas, Cipriani Boulevard, Davis Drive, Hillcrest Drive, Hallmark Drive, and Christian Drive) and six along El Camino Real (Davey Glen Road, Middle Road, Ralston Avenue, O'Neill Avenue, Harbor Boulevard (north) and Harbor Boulevard (south)).

Because it is a state highway, Caltrans controls the signals along El Camino Real. Staff has determined that Caltrans has allowed for such battery back-up power systems in the past in other cities. Though the cost and process involved is not known at this time.

All battery back-up power systems come with limitations. They can only control the signals for the life of their battery (as little as 2-4 hours). The batteries are sometimes too large to fit inside current signal control boxes, requiring upgrades. Also, the batteries have a limited life of their own and must be replaced periodically.

Though an emergency battery back-up power system could be valuable at all fifteen controlled intersections in Belmont, five have been identified by staff as the most desirable. They are (in no particular order) Ralston Avenue at Old County Road, Ralston Avenue at Hiller Street, Ralston Avenue at Sixth Avenue, Ralston Avenue at Alameda de las Pulgas and Ralston Avenue at Cipriani Boulevard. Staff believes such a system at these five intersections could greatly improve the traffic flow and safety (for officers and motorists) in the event of any power failure (natural or man-made). Clearly, the Ralston Avenue and El Camino Real intersection would also be very desirable; however, additional research will be necessary to determine the process for

gaining Caltrans cooperation for the project.

Fiscal Impact

The cost per intersection will be approximately \$4,000. Figuring in installation, the total cost for the initial five intersections is estimated at approximately \$25,000. For funding purposes, the Department of Public Works will request a mid-year adjustment to the Streets Improvements fund (234).

Public Works will then work with Caltrans to determine what we need to do to install battery back-up on the traffic signals along El Camino Real. That project funding will be included in the next CIP program as part of the FY10 budget.

Public Contact

Posting of the City Council agenda.

Recommendation

Research and procure a system for alternate power sources for traffic control devices along Ralston Ave.

Alternatives

1. Take No Action
2. Provide Alternative Direction

Attachments

None

Respectfully submitted,

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