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CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Hans F. Larsen

SUBJECT: **Streetlight Outage Status Report**

DATE: November 19, 2012

Approved

Date 11/20/12

INFORMATION

This memorandum provides an update to Council on streetlight outages and information on how the public can initiate streetlight repairs, including those caused by streetlight wire theft. Public concern about outages increases at this time of year when daylight savings time ends and nights are longer, so it is important that Council offices and community members are aware of available services levels and the process for reporting streetlight outages.

Streetlight System, Outages and Repairs

Understanding the basics of the streetlight system provides important context on performance, outages and repairs. The streetlight inventory includes a variety of wattage types installed across the City on major roadways and in neighborhoods. The basics of the system include:

- 62,000 streetlights Citywide
- Average streetlight bulb life is three to four years on major roadways; five to six years in neighborhoods
- 11,000 outages are repaired annually on average
- The current primary causes of streetlight outages are: bulb burnout (85%), fixture and wiring malfunction (10%) and wire theft (5%)
- In 2009, 900 streetlights were shut off due to budget reductions

The majority of streetlight outages are caused by burned out bulbs. Typical repair times for burned out bulbs are seven to 14 days. In 2011-12, 54% of all outages were repaired within seven days, and 70% within 14 days. In the first quarter of 2012-13, 65% of all outages were repaired within seven days, and 73% within 14 days.

Outages are also caused by fixture and wiring malfunctions (due to aging streetlight infrastructure) and streetlight wire theft. These types of outages are more complex than bulb replacement, resulting in a more resource and time intensive repair. When fixture and wiring problems cause an outage, it requires the specialized skills of an electrician to make the repairs. Based on the current backlog of needs and with a limited staff of DOT electricians, the typical timeframe for repairing streetlight fixture and wiring malfunctions is three to four months.

The most labor-intensive repairs involve replacing stolen wire, because they require an electrician and multiple maintenance workers to pull new wire. As a result, resources used to make these types of repairs can have an impact on maintaining acceptable repair times for other outages. Currently, the typical timeframe for stolen wire replacement is four to five months. There are occasions where stolen wire is replaced or fixture and wiring malfunctions are repaired in a shorter period of time, usually as a result of staff determining that the cumulative impact of outages in a neighborhood or area, including previously shutoff streetlights, may cause an expanded dark area within the community.

Streetlight Repair Performance in 2012

In January 2012, reported streetlight outages in the City reached 1,339. From January to September 2012, 10,635 streetlight outages have been repaired, an average 1,180 per month. By October 1, 2012, streetlight outages had been reduced to 848, a 37% reduction. Not reflected in the outage numbers are the 900 streetlights that were shutoff in 2009 due to budget reductions.

Entering Peak Season for Streetlight Outages

With daylight savings time ended, the City enters a period of the year when requests to repair streetlight outages are at their peak. Throughout the late fall and winter, with longer nights, DOT typically experiences an increase in repair requests in the 25% range due to heightened public awareness of streetlight outages. The timeframes for bulb replacement repairs within seven days typically drop to the 50% range because no additional resources have been available to respond to the surge in repair requests. During spring and summer, repair within seven days is typically in the 65% to 70% range.

It is important for Council and the community to be aware that repairs are made primarily in response to public notifications. With past budget reductions, there is limited ability for maintenance crews to proactively search for outages. As a result, DOT relies on the community to report outages as soon as possible after they are noticed as follows:

To report streetlight outages to DOT (include pole #, location and contact info), leave a voice mail message at (408) 794-1903 or email street.lights@sanjoseca.gov

Streetlight Repair Process Improvements

DOT has evaluated the process of identifying, reporting and repairing streetlight outages with the goal of keeping outages to a minimum and making timely repairs. Process improvements have included enhanced use of mapping and database tools to identify outage types and locations more efficiently, and to deploy resources in a way that maximizes the number of lights that can be repaired using the right personnel and resources on the first response. Additionally, proactive preventive maintenance efforts are being piloted on major street corridors to ensure that streetlights in high traffic areas are kept operational. DOT staff will continue its efforts to keep streetlights operational and streamline the process of repair.

Incidence of Stolen Streetlight Wire Continues

As previously reported to Council, theft of streetlight wire has been a major problem over the past few years. Since January 2012, the incidence of stolen streetlight wire has remained fairly constant, with an average of 14 new incidents reported each month. Staff has tracked the locations of the wire theft incidents to determine if there is any predictable pattern or concentrations. The data indicates that the theft is occurring across the City in all Council Districts, although Districts 4, 6, 7, 8 and 9 have had the highest incidence of stolen wire.

To better address incidence of stolen wire, the City Council allocated funding at Mid-Year 2011-12 and in the 2012-13 Budget. The additional funding has enabled the repair of 145 stolen wire locations (516 total lights) from January through September 2012, an average of 16 locations repaired per month, enabling a slight reduction in the backlog. Currently, 85 locations of stolen streetlight wire remain on the backlog list for repair.

In an effort to reduce the incidence of stolen wire, DOT has coordinated with the Police Department on a number of measures. A video was prepared for Police Department briefings to provide patrol officers with information on what to look for in terms of activity around streetlights and the electrical service wire boxes. To date, there are three confirmed cases where arrests have been made. It is important that the community continue to be a partner in keeping the streetlights operational by not only reporting outages, but also reporting any suspicious activity around streetlights by non-City personnel immediately to 911. Additionally, DOT has been sealing lids to the service boxes on all stolen wire repairs made this year to minimize the potential of reoccurrence at the same location, and has piloted communications equipment that can alert staff in the event of an interruption of power to a streetlight. If the incidence of stolen wire continues at the current rate it is likely that on-going funding will be needed to further manage this issue.

Conclusion

Streetlight outages and stolen streetlight wire continue to be a priority focus for DOT. With burned out bulbs continuing to be the main cause of outages, the continued conversion of the City's streetlight system to longer lasting LED streetlights remains the long term solution. A status report on the LED Conversion Program will be submitted to Council within the next few months. Outages caused by electrical malfunctions and stolen streetlight wire continue to be the most resource and time intensive for repair and will likely require additional resources to make substantial improvement in reducing the backlogs associated with those outages.

/s/

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Director of Transportation

For questions, please contact Diane Milowicki, DOT Division Manager, at (408) 794-1985.