

# High Voltage Streetlights: Frequently Asked Questions

From time to time, we have failures of some of our high voltage street light circuits, and several Modesto neighborhoods can be without streetlights for extended periods of time. We understand that this is a serious concern and that many of our citizens are affected by this problem. We do everything we can to keep these circuits operational and prevent future outages.

At the City of Modesto, we believe it is essential to inform the public of any serious or complex issue. Below, you will find answers to questions most frequently asked by our citizens.

## Where can I report an outage?

You may report any outages to our Traffic Electrical division at 209-342-2297.

## Usually my lights are back on in a few hours or days. Why is this taking so long?

Typically when street lights fail, it is due to one of several simple reasons that may occasionally affect our newer, more modern, low voltage street light circuits. The most recent streetlight failures are occurring on a few of our 29 high voltage circuits which are much older, more complex to fix, and more likely to fail.



## Why are HV circuits failing?

Due to the age of the wiring, the method of installation, and the higher voltage, the wires are now “going to ground.” This means that the insulation covering the wire has deteriorated to the point that it no longer contains the electricity as efficiently as it did when it was installed many years ago. This results in further damage to the insulation which will ultimately create more failures.

## Why doesn't the City leave some of the lights on when a circuit fails?

High voltage circuits are “series” circuits, not “parallel.” When a high voltage street light circuit fails, the street lights for the entire neighborhood have to be shut off. This is for safety, while troubleshooting and repair tasks are completed.



## What are high voltage circuits?

High voltage (HV) circuits, which are decades old, operate between 2400 and 4000 volts. This is hot enough to turn dirt into glass. (As a comparison, modern lighting is only 120- 277 volts.) Originally, the wiring was laid in a trench, without a conduit. This is known as “direct burial wire.” These wires only have one conductor, unlike modern circuits which have two conductors.

## Why does it take so long to fix them?

Because the units are so old, they may fail immediately after being fixed, requiring additional repairs. Vandalism and anti-theft measures installed on city streetlights has also increase the repair time.

A total of 7 electricians are responsible for troubleshooting, and repairing 11,035 streetlights in Modesto, as well as maintain:

- Modesto traffic signals
- School beacons
- Crosswalk beacons and lighted crosswalks
- Intersection beacons
- ATMS – fiber, twisted pair
- Airport lighting
- Parking Lot/Garage lighting
- City, Police, Fire, and Park facilities electrical systems
- Traffic signals operated by Riverbank, and Stanislaus County

## Will the new LED streetlights fix this problem?

The LED streetlight upgrade program did not include the replacement of HV circuits and streetlights. This is because existing LED luminaires do not work above 480 volts. The infrastructure of HV circuits needs to be replaced with low voltage circuits. This will include installing conduit, pull boxes, wiring, and other infrastructure. At that point, LED luminaires could be installed.

## What is the cost of replacement?

The cost of upgrading all 29 HV circuits and infrastructure is approximately \$6 million.

## Will you replace them in the near future?

Yes, on February 26, 2019 City Council approved a program to fund \$1,000,000a year as a result of Senate Bill (SB), and Gas Tax funds to replace these street lights to low voltage. The Estimated time frame to complete this project is four to five years.



For additional questions, or to report an outage, please contact our Traffic Electrical Division at (209) 342-2297.

