



TRANSLATION SERVICES AVAILABLE AT (206) 684-3000

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AUGUST 26, 2020

Contact Voltage Survey Summary

INTRODUCTION

2019 marks the tenth-annual mobile contact voltage survey. City Light’s work in contact voltage detection highlights our commitment to safety, reliability and energy efficiency. We are responsible for approximately 85,000 streetlights within our 131-square mile service territory. Nearly 35,000 structures are conductive including poles, handholes and access covers. Several factors contribute to contact voltage; they include aging infrastructure, weather, improper installation, rodent activity, copper wire theft and corrosion.

HISTORY

In fall 2010, a dog was electrocuted after stepping on an energized handhole cover. A combination of factors contributed to the contact voltage that caused the structure to be electrified. Shortly after the discovery, City Light was notified of six other incidents of dogs receiving non-lethal shocks from conductive structures in the public right-of-way. The incidences and further investigations identified potential issues with contact voltage in the streetlight system. City Light responded by instituting an annual detection program, maintenance improvements, and internal business process revisions.

ANNUAL TESTING METHODOLOGY

This year, City Light divided the service territory and contracted with two companies to complete the work. Survey routes are calculated and tracked to ensure survey area coverage. GPS data and voltage readings are transmitted daily, and crew responses are triaged and recorded. While traveling under 25 miles per hour, the mobile detection systems can detect objects electrified by as little as one volt. All data is logged to audit the survey process and influence asset management. The voltage detection program produces actionable data to guide system repairs and improves safety for all.

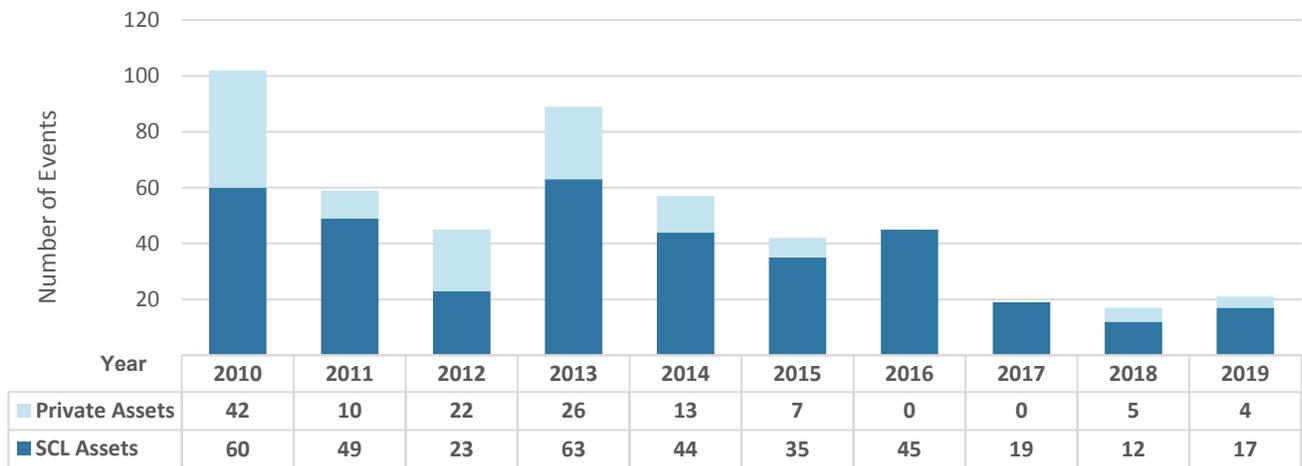
The testing equipment does not distinguish between City Light infrastructure and other conductive assets in the right-of-way. All contact voltage events over 5 Volts are responded to with urgency.

Structures producing 30 Volts or greater are responded to immediately with action taken to investigate, repair or deenergize until necessary repairs can be made.

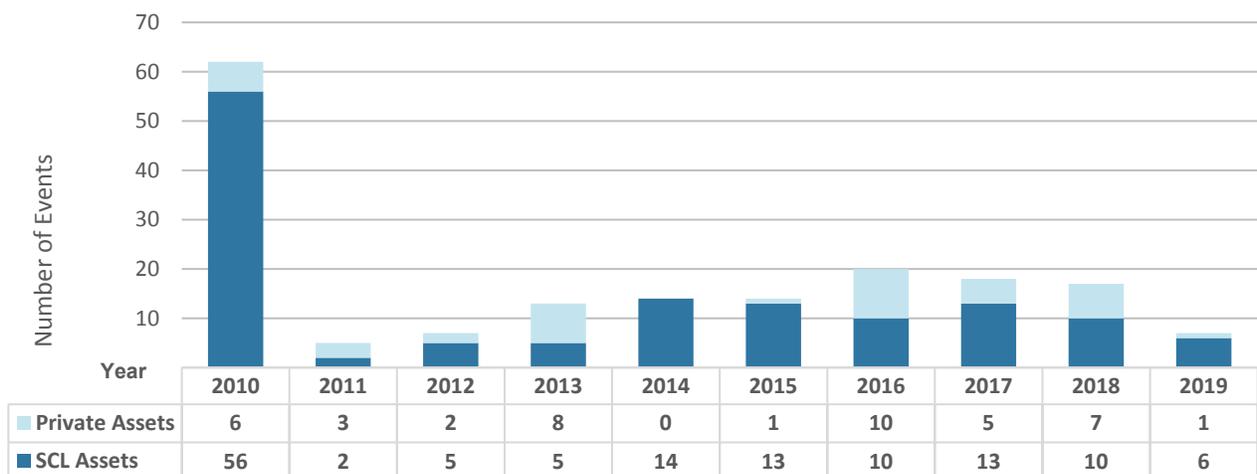
SURVEY RESULTS

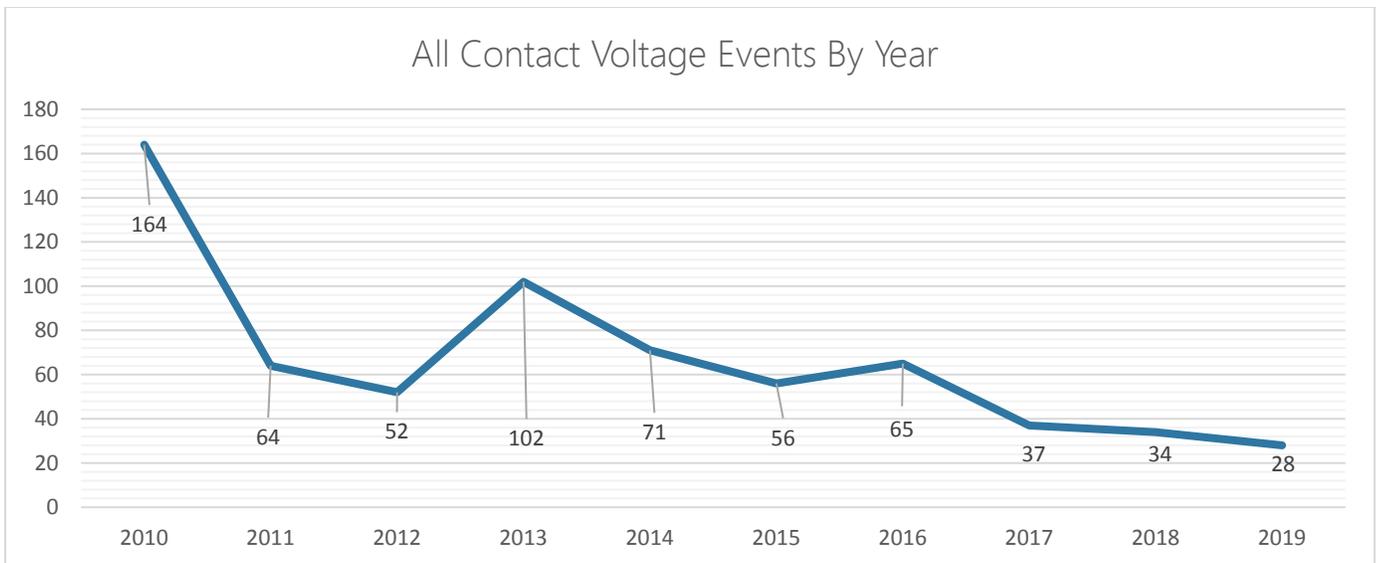
The latest survey operated from October 22, 2019 to December 31, 2019. The following charts display the total number of public and private contact voltage events (i.e., electrical faults) discovered. The event totals below differ from the attached final reports due to the parent-child nature of the data. A single contact voltage event can produce voltage at multiple conductive structures. City Light finds event data below the most valuable for analysis of program performance.

**Contact Voltage Events
Less than 30 Volts**



**Contact Voltage Events
Greater than 30 Volts**





NEXT STEPS

Based on the achievement of the contact voltage detection program:

- City Light will continue touch potential testing for both its crews and contractors performing routine streetlight maintenance.
- City Light will accept responsibility for testing and inspecting all streetlight equipment before it is energized.
- The public is reminded to notify the Streetlight Hotline at (206) 684-7056 or street.light@seattle.gov with any concerns about a streetlight or if an energized structure is suspected.

MORE INFORMATION

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<http://www.seattle.gov/light/streetlight/streetlightsandcontactvoltage.htm>