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NOVEMBER 30, 2018

Contact Voltage Survey Summary

INTRODUCTION

2018 marks the ninth-annual mobile contact voltage survey performed by Power Survey Company (PSC). 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 the fall of 2010, a dog was electrocuted after stepping on an energized handhole cover. A combination of factors contributed to the touch potential 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

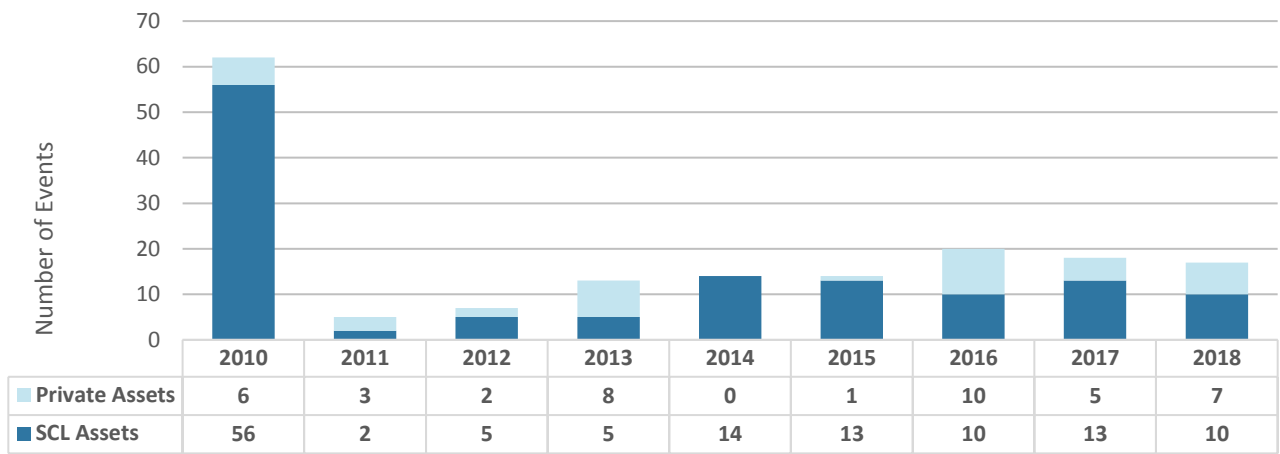
City Light hired a national expert to support our contact voltage detection program. Survey routes are calculated and tracked to ensure survey area coverage. GPS data and voltage readings are transmitted daily, and crew responses are triaged and recorded. While traveling under 25 miles per hour, the mobile detection system (SVD2000) is capable of detecting 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 touch potential 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.

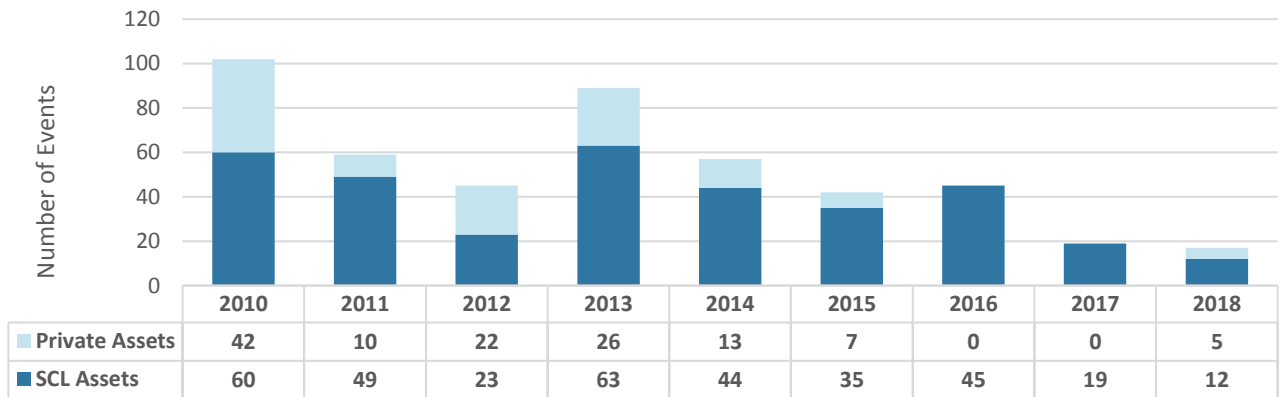
SURVEY RESULTS

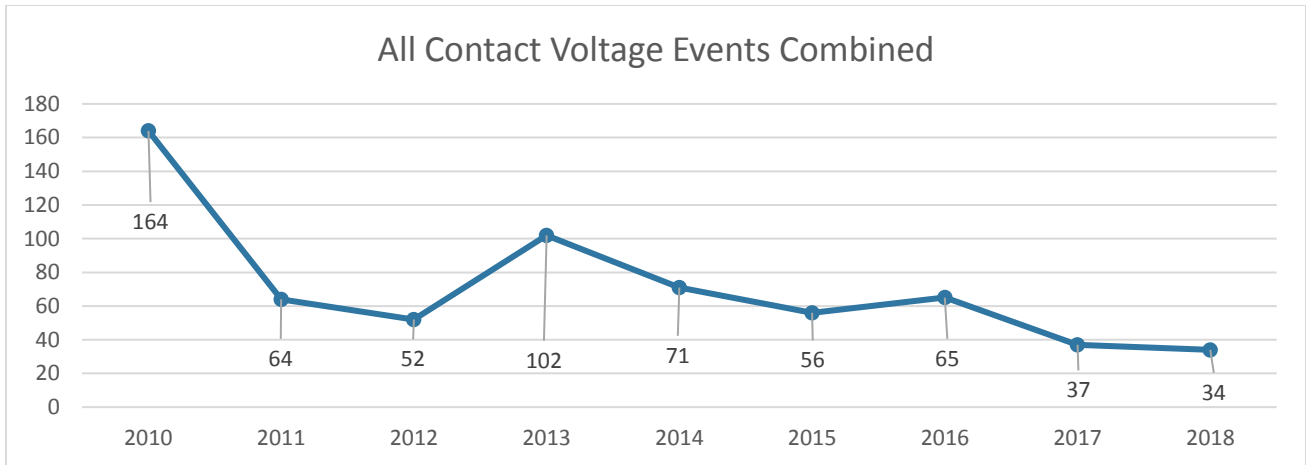
The latest survey operated from August 28, 2018 to November 5, 2018. The following charts display the total number of public and private electrical faults discovered. The event totals below differ from the attached final report submitted by Power Survey Company. This difference is explained by the parent-child nature of the data. A single fault event can produce voltage at multiple conductive structures.

Contact Voltage Events Greater than 30 Volts



Contact Voltage Events Less 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 continue to annually test the streetlight system and report findings to the public.
- 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>