



8353 UNDERGROUND EQUIPMENT REPLACEMENT

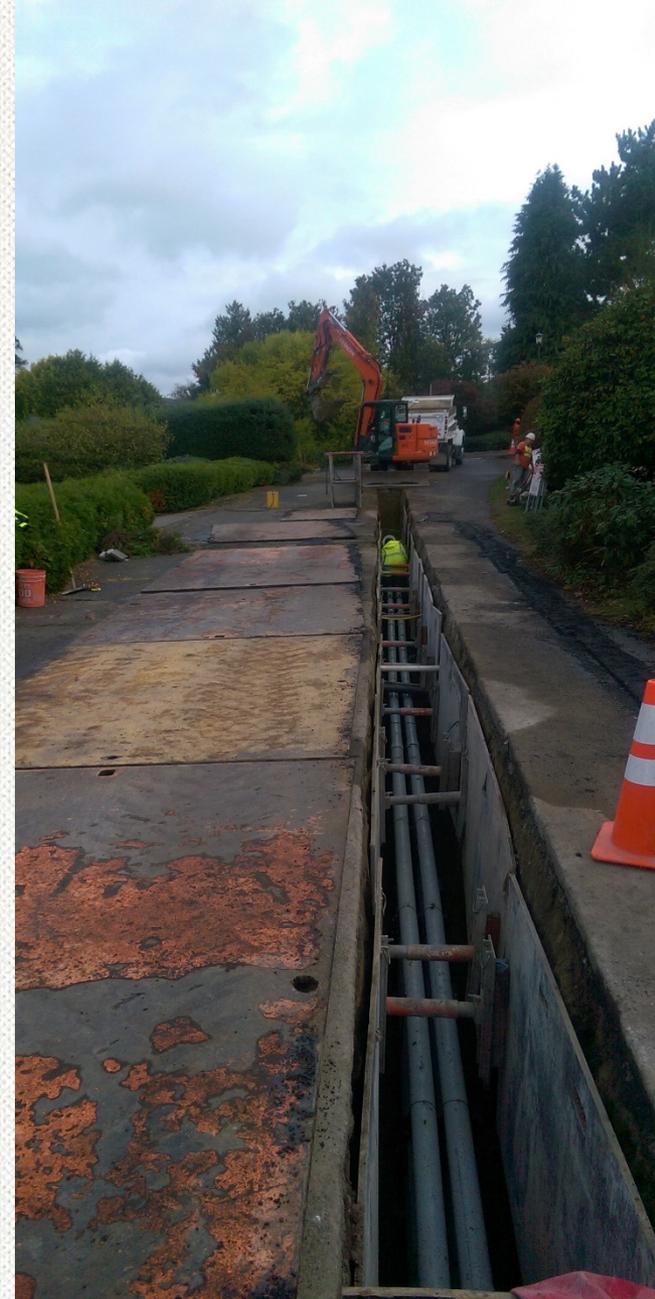
Cable Replacement Project

John Nierenberg | May 23rd 2017



WHAT IS THE CONDITION OF OUR UNDERGROUND CABLE SYSTEMS?

- **The average age of our distribution cables is about 33 years old, but the average age of our direct buried cables system is 39 years old.**



WHAT HAS BEEN ACCOMPLISHED

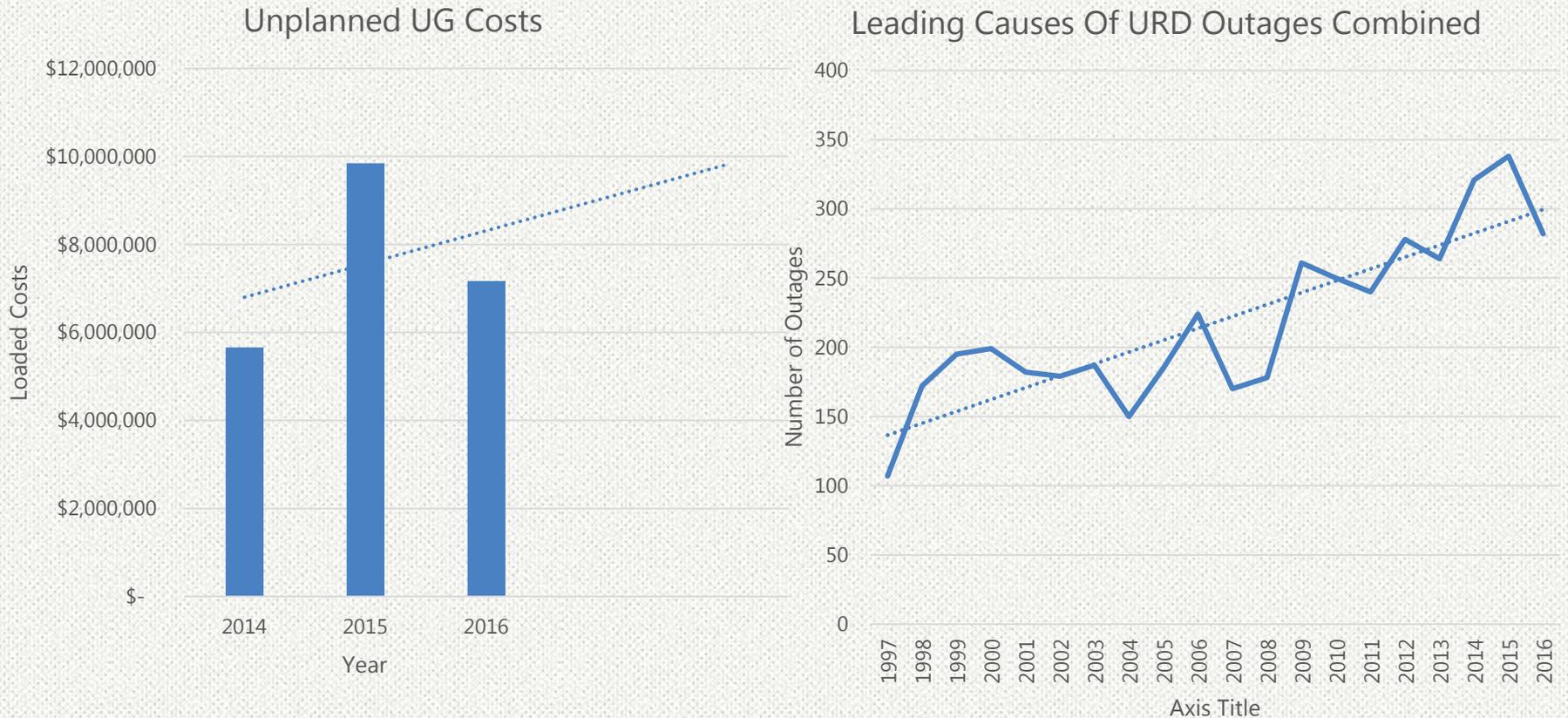
- Over 130 miles of direct buried cables have been rejuvenated.
- 13 miles of duct system have been built from 2013 to 2015
- Over 2.7 miles have been completely replaced.

Project Name	Completed	Trench Miles
Leschi	2012	0.5
Crestmont	2013	0.5
Innis Arden	2013	0.2
Mt Baker	2013	0.4
Boston Terrace	2014	0.2
Carkeek Park	2014	0.7
Sunset Estates	2014	0.2
Total Miles		2.7



UNPLANNED FAILURES

TREND OF COSTS AND UG DISTRIBUTION OUTAGES



Twice as many underground system (UG) outages as in the overhead system

PRIORITIZATION OF REBUILDS

- Cable is replaced based on factors such as cable age, condition, as well as the number and duration of outages in the neighborhood.
- No new areas are being undergrounded.



UG CABLE REPLACEMENT PRIORITY LIST

NEIBORHOODS	DESIGN YEAR		CONSTRUCTION YEAR		LENGTH (FEET)
	Civil	Electrical	Civil	Electrical	
Blueridge I	Complete	2016	2016	2018	12,478
Blueridge II	Complete	2017	2017	2019	9,885
Hillcrest	Complete	2017	2017	2017	660
Arroya Beach	2017	2018	2018	2020	7,782
Brace Point	2018	2019	2019	2020	10,300
Viewridge-Leschi	Complete	2018	Complete	2019	400
5th Ave Arterial UG	2018	2019	2020	2021	5,280
Meridian Arterial UG	2019	2021	2020	2022	5,100
Laurelhurst Phase 7	Complete	Complete	Complete	2017	4,000
Laurelhurst Phase 9	Complete	Complete	Complete	2017	1,011
Shorewood	2018	2019	2019	2021	3,099
Queen Anne	2019	2020	2020	2021	3,098
Crestmont	2020	2020	2021	2022	1,512
Michele Park#4	2020	2021	2021	2022	1,207

HOW MANY MILES OF DIRECT BURIED ARE LEFT

- Out of 578 circuit (trench) miles of primary cable.
- 341 circuit (trench) miles are direct buried.
- 130 miles have been injected
- 13 miles of duct system have been built from 2013 to 2016.
- 200 circuit (trench) miles of direct buried cables near end of life need to be replaced.