



Power System Reliability Program Fiscal Year 2023-2024 Update

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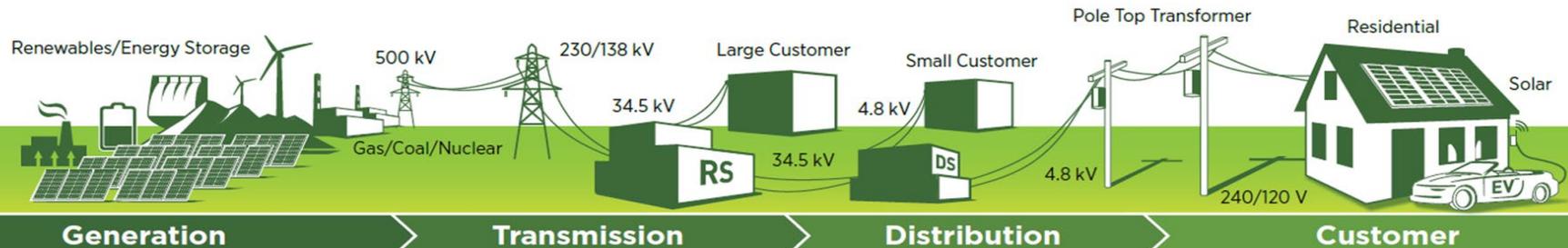
Overview

Background

- The Power Reliability Program (PRP) was established in 2007 with a focus on Distribution assets
- The PRP became the Power System Reliability Program (PSRP) in 2014 to include Generation, Transmission, and Substation assets

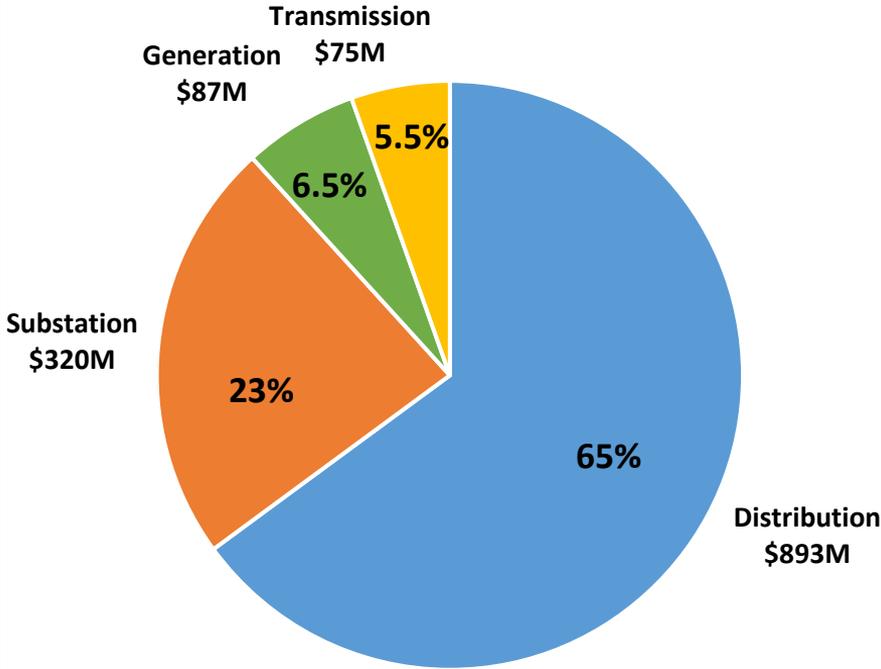
Objective

- Evaluate power system current and future needs
- Establish and maintain reliability goals



Budget and Facts

FY 23-24 Actuals



PSRP Facts

- Over 200 projects/programs:
 - Pole Replacement – \$153M
 - Cable Replacement - \$102M
 - Vegetation Management – \$69M

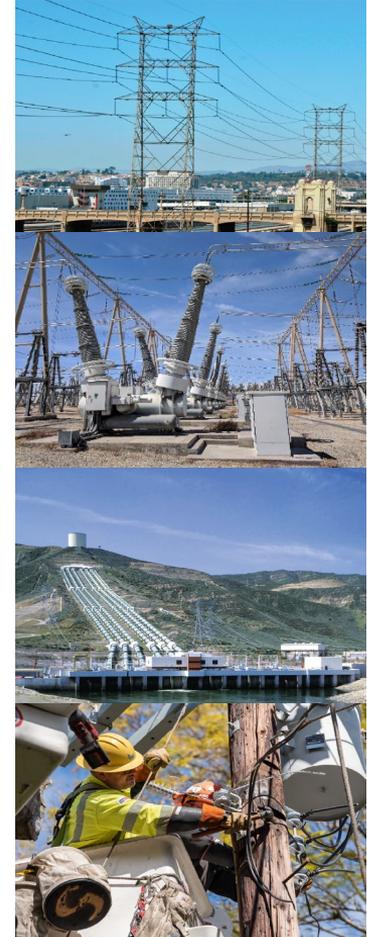
FY 23/24			
Program	Actual	Budget	Expenditure Variance
Capital	\$747M	\$838M	-11%
O&M	\$628M	\$605M	+4%
Total	\$1,375M	\$1,443M	-5%

FY 24/25 Budget – \$1,584M

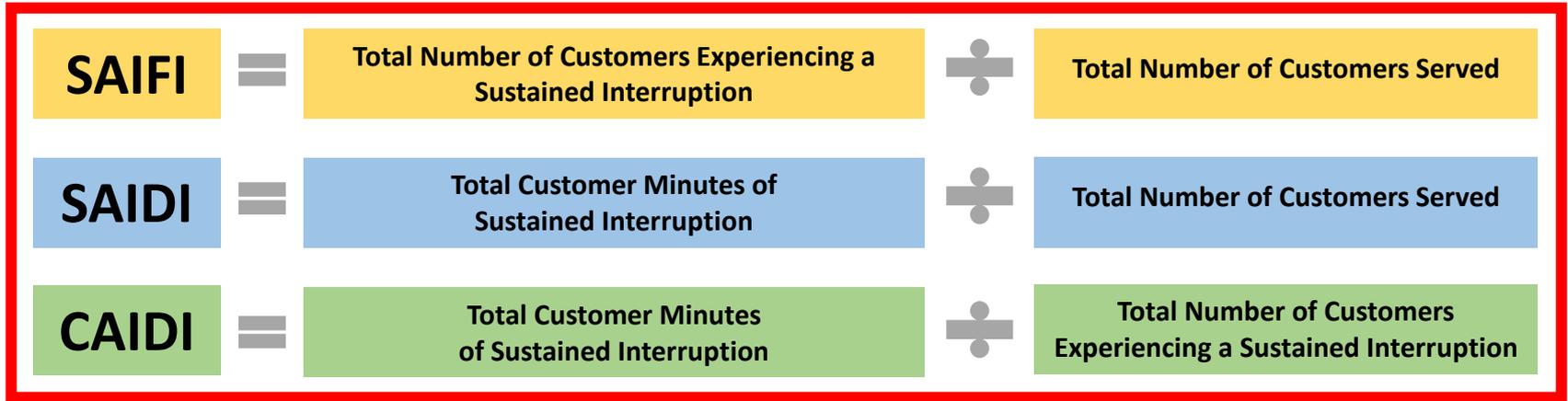
Key Assets

System	Asset	Targets	Actuals
Generation	Generator Transformers	2	0
	Major Generator Inspections	3	4
Transmission	(Identifying new KPIs)	-	-
Substation	Transformers	31	13
	Circuit Breakers	149	49
	Substation Automation Upgrades	12	0
Distribution	Poles	3,700	2,931
	Crossarms	12,600	10,947
	Cable (Miles) - Synthetic & Lead	60	60.4
	Transformers	1,255	1,305
	Substructures	24	24

■ - met or exceeded target



How to Measure Reliability?



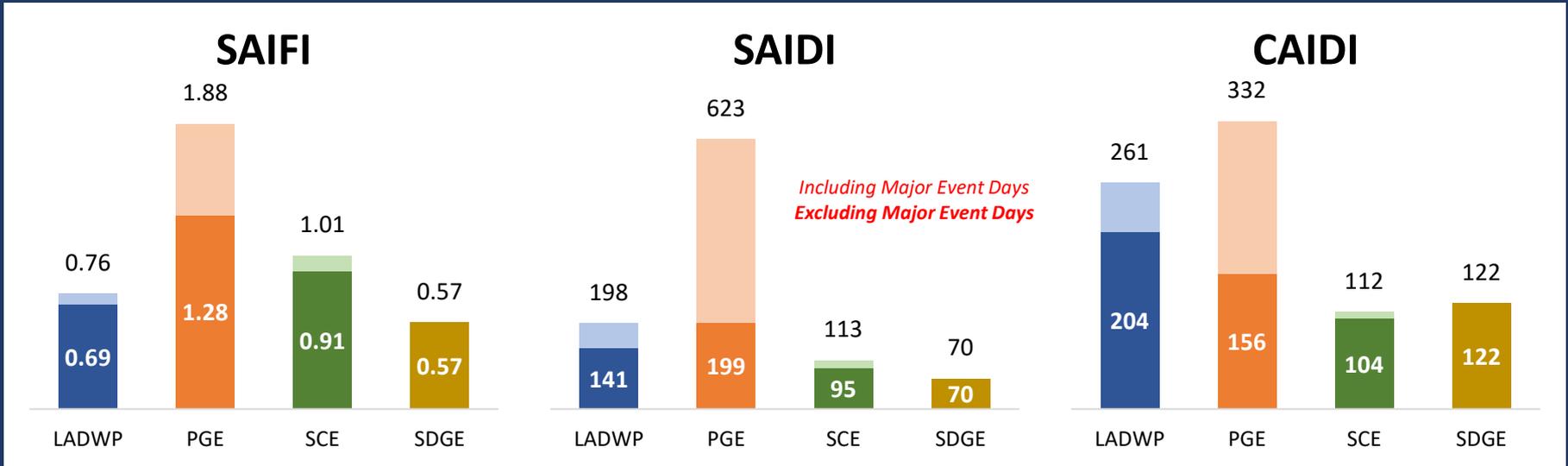
Sustained Outage – greater than 5 minutes



Momentary Outage – less than or equal to 5 minutes

Major Event Days (MEDs) – Days with a daily SAIDI exceeding a statistical threshold based on the previous 5 years of data

2023 Reliability Metrics



LADWP FY 24/25 Targets (excluding Major Event Days):

SAIFI: 0.72 outages/year or lower

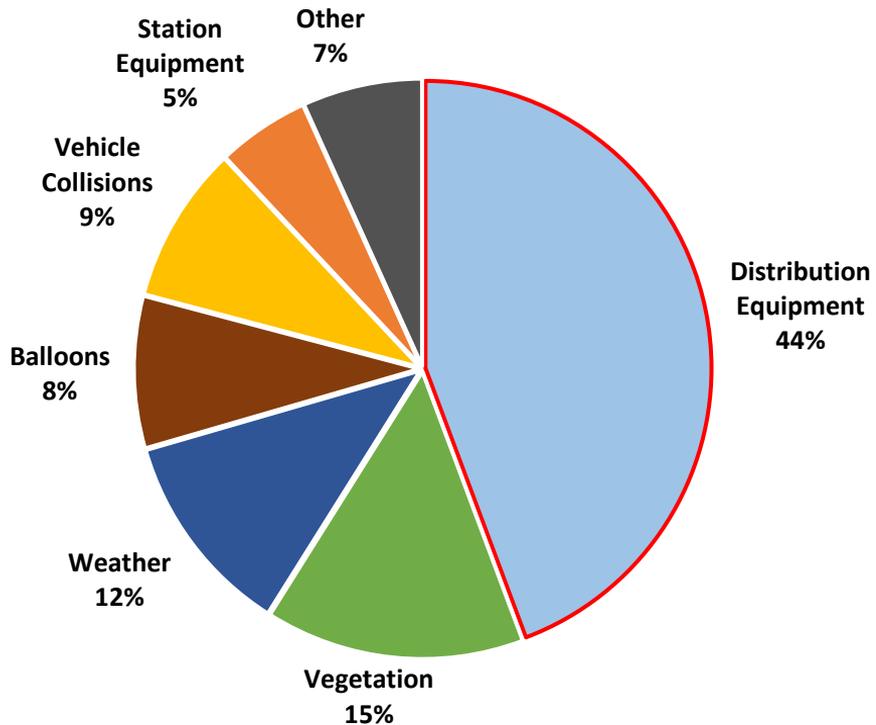
SAIDI: 115 minutes/year or lower

CAIDI: 160 minutes/outage or lower

What Impacts LADWP Reliability Metrics?

SAIDI Contributions

2021-2023 (excl. MEDs)



Underground Cables and Splices



Transformers



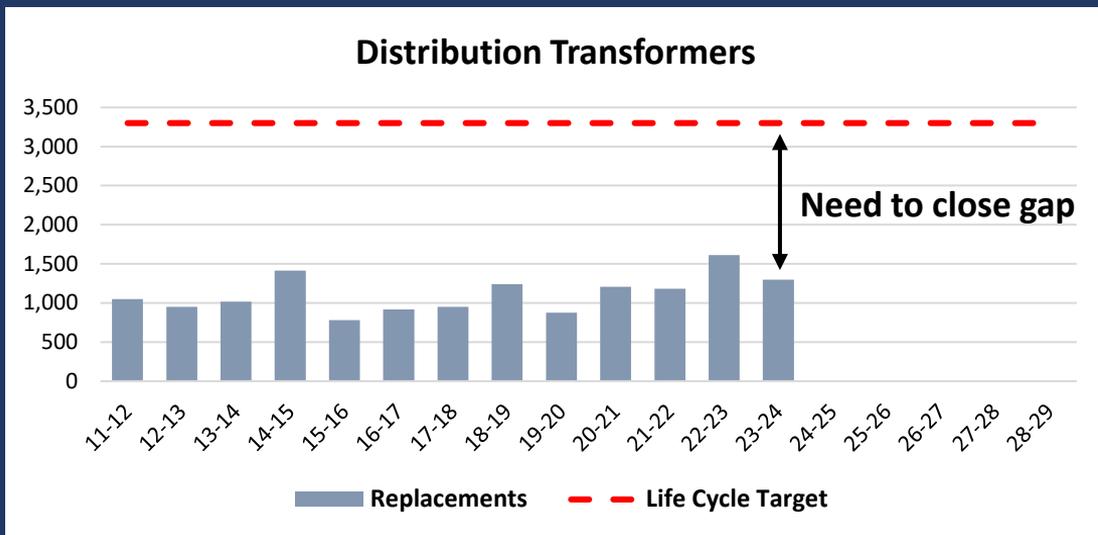
Poles and Crossarms



Travel Time

Distribution Transformers

- Transformers in-service: **131,754**
- Average life expectancy: **40 years**
- **32%** of in-service distribution transformers are over their average life expectancy

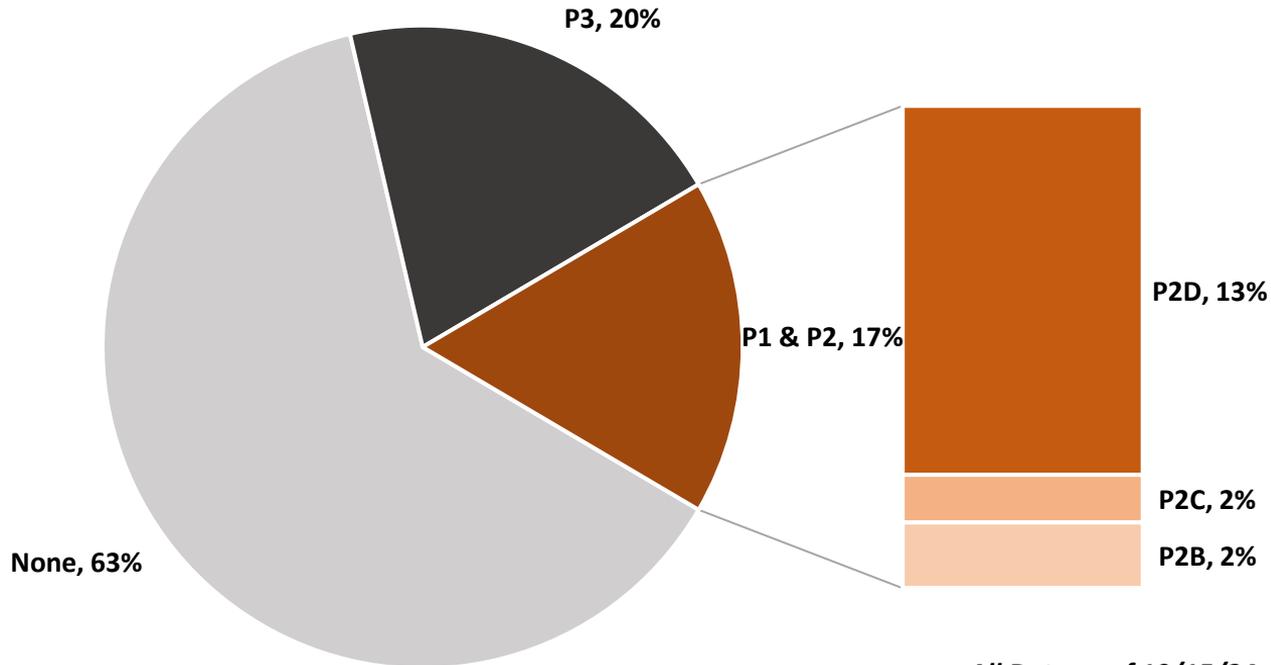


Plan to close the gap with:

- Additional resources
- Better data
- Prioritization

Poles and Fix-It Tickets

LADWP Distribution Utility Poles by Highest Priority Fix-It Ticket

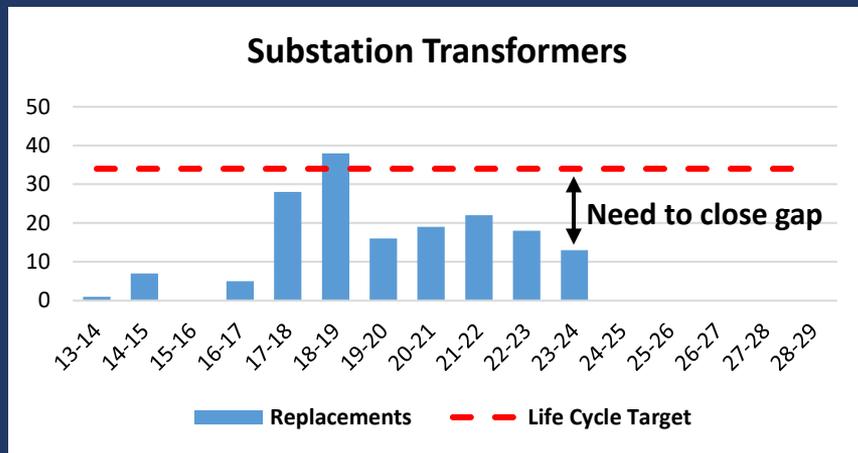
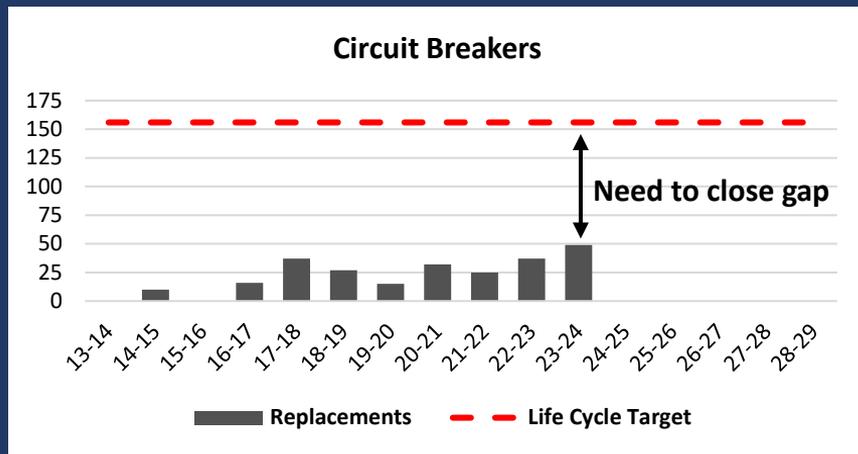


All Data as of 10/15/24

Distribution Utility Poles: 311K

Substation Equipment

Asset	Units	Avg. Life Expectancy (years)	> Avg. Life Expectancy
Circuit Breakers	5,626	36	60%
Transformers	1,027	30	61%



Substation Transformer

Substation Improvements

In Progress: Circuit Breaker Life Extension

- Completed 924 life extensions since 2016

Long Term: Station Replacement



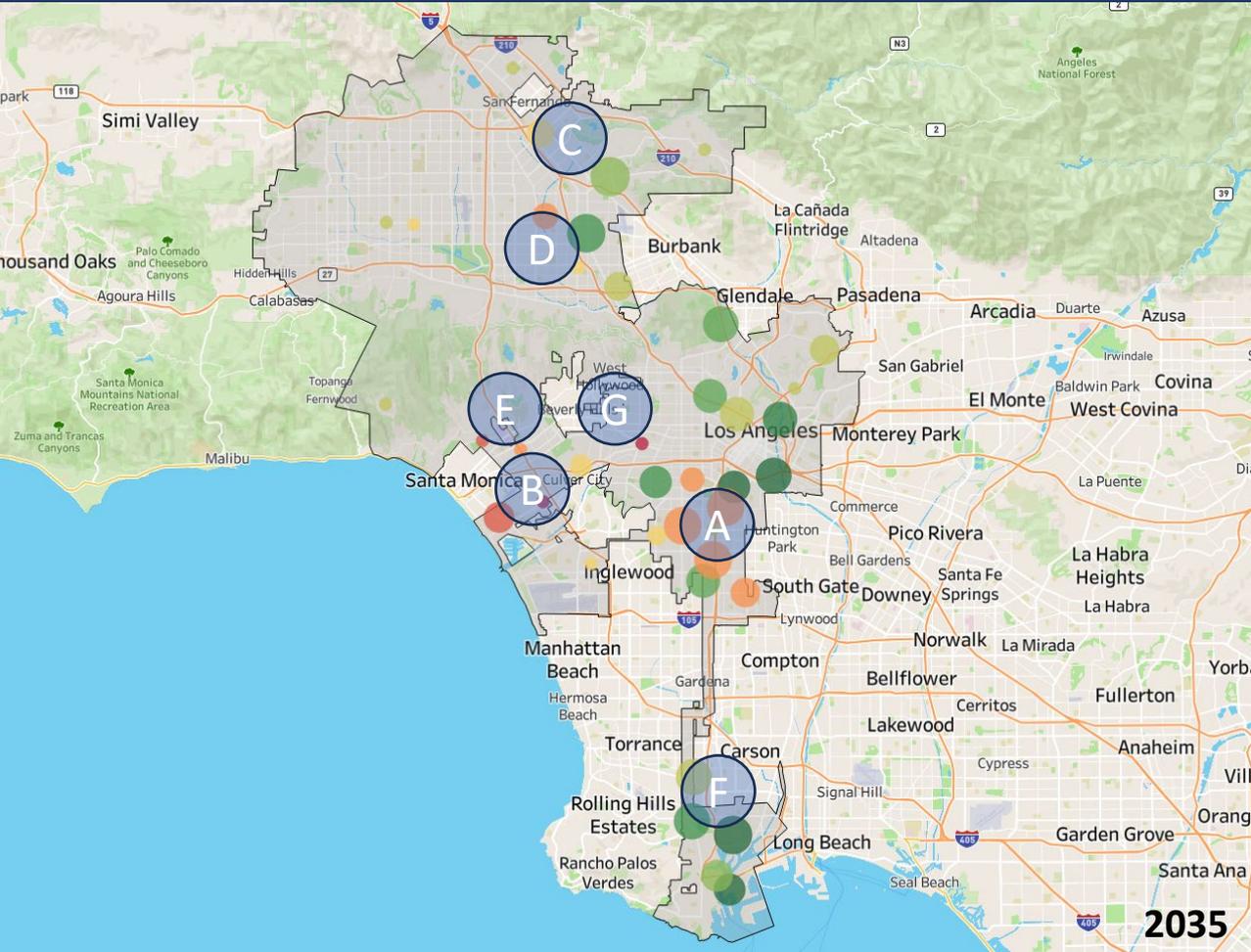
Worst 10 DS Stations

<u>Station Name</u>	<u>Area</u>	<u>Score</u>
DS102 ROSCOE	E Valley	31
DS100 VANOWEN	E Valley	34
DS051 ISLAND	South LA	35
DS032 WOODLAWN	South LA	35
DS045 WESTERN	South LA	36
DS041 FIGUEROA	South LA	37
DS106 230TH STREET	South LA	38
DS123 HARBOR CITY	South LA	39
DS005 MATEO	Metro	40
DS114 CRYSTAL SPRINGS	Metro	41



DS-102

Need for New Distributing Stations



Size = condition | bigger circle means good candidates for replacement

Color = yellow, orange, & red means in need of additional capacity.

OK Needs Capacity

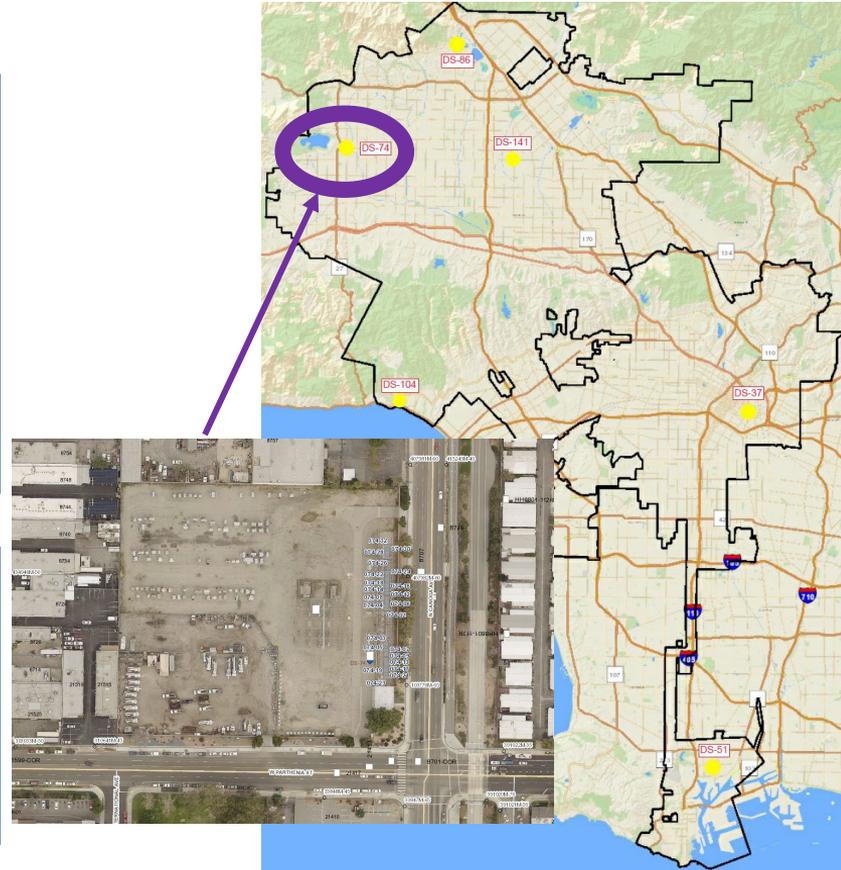
Additional Distribution Voltage Pilot

Scope

- Chatsworth Area (Distributing Station 74)
- Construct a fully automated 12.47-kV substation with two transformer banks and ten to 12 circuits
- Construct a modern 12.47-kV Distribution System (poles, cables, conduits, transformers, etc.)
- Cutover DS-74 customers to the new 12.47-kV system
- Keep DS-74 and existing 4.8-kV distribution system in operation until the complete cutover

Why DS-74?

- Available vacant land and fringe service area
- Nearby construction reporting locations and training centers
- A mix of residential and commercial customers
- Redundant sub-transmission (34.5-kV) feeds from Northridge Receiving Stations (RS-J)



Ongoing Enhancements



Program Management



Human Resource Planning



Data



Benchmarking



Safety



Equity

Questions