



BUILDING A STRONGER L.A.

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Martin L. Adams, General Manager and Chief Engineer

October 12, 2021

The Honorable City Council
Office of the City Clerk
Room 395, City Hall
Mail Stop 160

Attention: Councilmember Mitch O'Farrell
Chairperson, Energy, Climate Change, Environmental Justice, and River
Committee

Honorable Members:

Subject: Council File No. 20-1354 – Zero Emission Vehicles/2035 City Transition and
Council File No. 21-0890 – Electric Vehicle Master Plan

Enclosed is a response to the subject referenced motions that requests the Los Angeles Department of Water and Power (LADWP) report to the Energy, Climate Change, Environmental Justice, and River Committee on an Electric Vehicle Master Plan, including a plan for preparing the City of Los Angeles' power supply for the transition to zero emission vehicles by 2025, 2030, and 2035.

If you have any questions or if further information is required, please call me at (213) 367-1338, or have your staff contact Ms. Winifred Yancy, Director of Legislative and Intergovernmental Affairs, at (213) 367-0025.

Sincerely,

A handwritten signature in blue ink, appearing to read 'M. Adams', is written over a horizontal line.

Martin L. Adams
General Manager and Chief Engineer

WJY:nsh

Enclosure

c/enc: Councilmember Mark Ridley-Thomas, Vice-Chair Energy, Climate Change,
Environmental Justice, and River Committee

The Honorable City Council
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Councilmember Kevin DeLeon, Member Energy, Climate Change, Environmental
Justice, and River Committee
Councilmember Paul Krekorian, Member Energy, Climate Change,
Environmental Justice, and River Committee
Councilmember Paul Koretz, Member Energy, Climate Change, Environmental
Justice, and River Committee
Ms. Winifred J. Yancy



Electric Transportation Program Updates

**Aligning to State Goals
Scaling LA's EV Charging Infrastructure & Programs
Improving Equity and Enhancing the Customer Experience**

September 28, 2021

Presentation Overview

Power

Enhanced EV Adoption and Charging Infrastructure Goals

Power

Strategies and Initiatives to Achieve the Goals

Power

EV Electric Service Design

CSD

Rebate Processing Status and Improvements

Power
+ CMCA

Equity and Outreach Initiatives

EV Adoption and Charging Infrastructure Goals

Power Engineering and Technical Services

State ZEV Goals

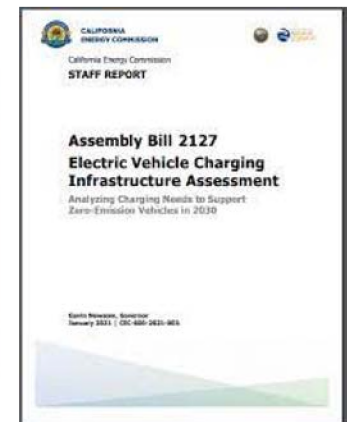
Governor Newsom's Executive Order (N-79-20):

- Requires dealers to end sale of new fossil fueled light-duty passenger vehicles by 2035.
- Electrify Freight Trucks by 2035 and Medium & Heavy Duty Fleets by 2045.



Assembly Bill 2127 EV Charging Infrastructure Assessment :

- Baseline: 1M public and shared private EV chargers are needed to support 5M EVs by 2030.
- CARB 2020 Mobile Source Strategy: 1.2M chargers will be needed for the 7.5M EVs required by 2030 in CA based on CARB's Draft 2020 Mobile Source Strategy.



Infrastructure Assessment Assumptions

Three Separate Models used to Capture Light-duty EV Infrastructure Needs for:

Short-distance
Travel

Long-distance
Travel

Ride-hailing

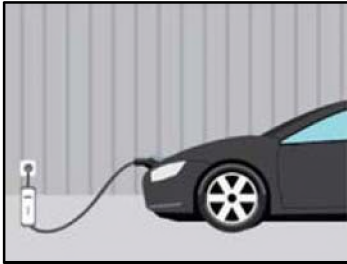





Key Assumptions

- Vehicle attributes
- PHEV vs BEV charging behavior
- Nonresidential vs Residential charging behavior
- Adapts to change in Technology

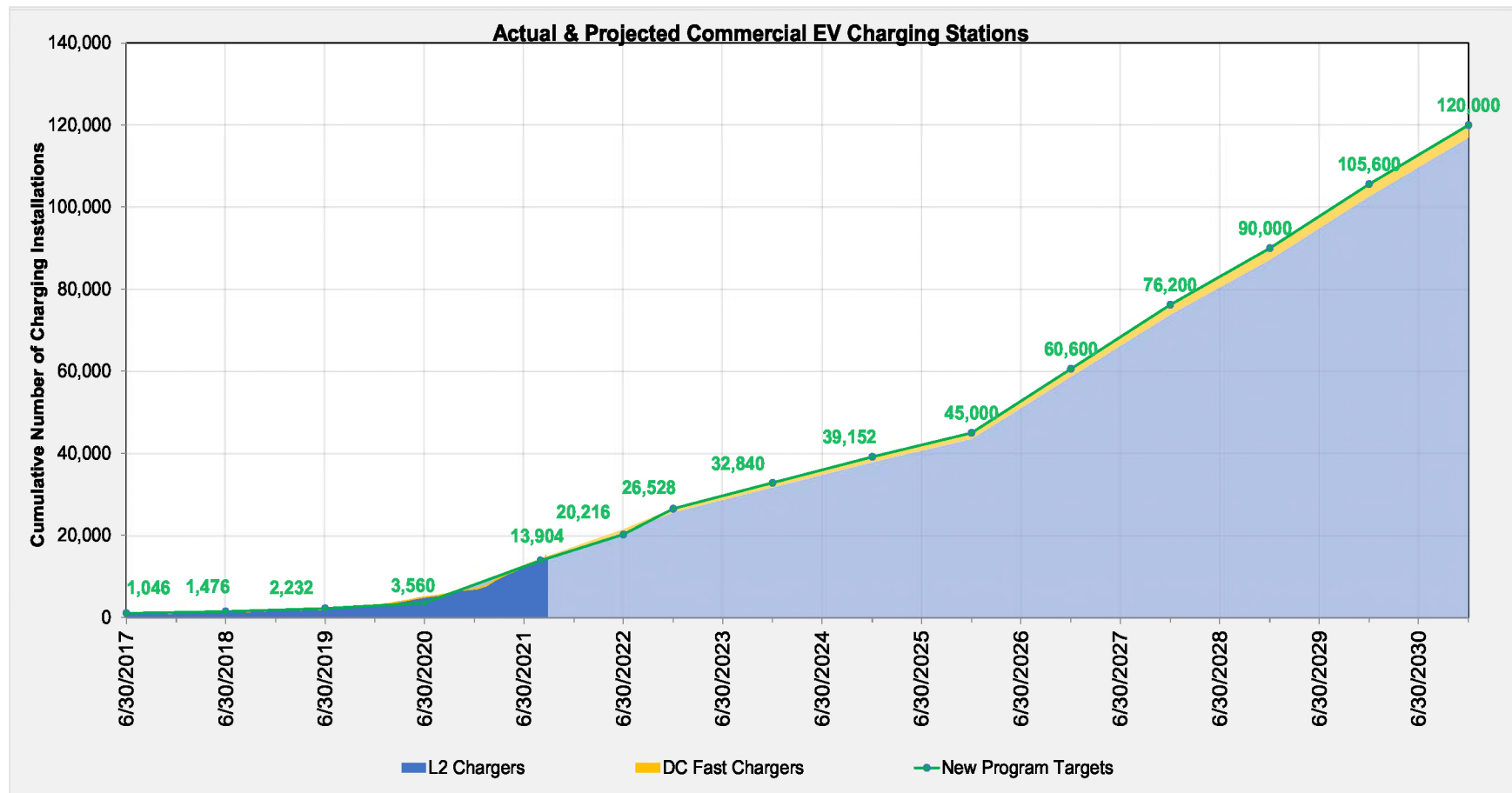
Modeling Takeaways

- Modeling tools will optimize over time and improve results
- CEC to publish report Biennially

EV Charging Options & Speeds

			
	Level 1 Charging	Level 2 Charging	DC Fast Charging
 Location	Home	Home, Work, Apartments	Public, Plazas, & Retail
 Speed	3 - 5 miles/hr	10 - 30 miles/hr	150 – 350+ miles/hr
 Time	20+ Hours	4 - 6 Hours	15 - 45 Minutes

Progress towards Revised Goals



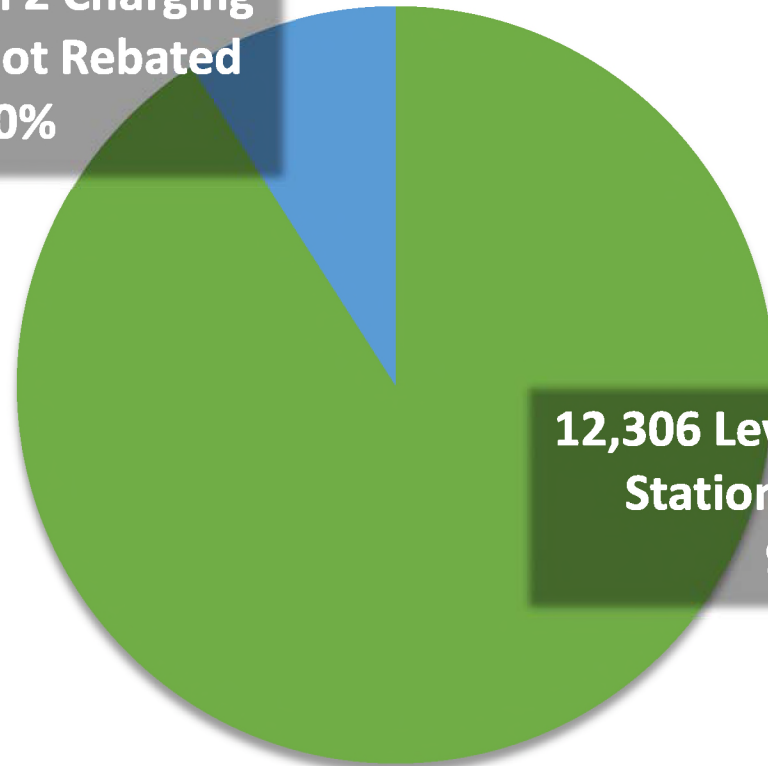
Commercial Rebate Program Impact

Total Level 2 Chargers
in the City of Los Angeles

13,567

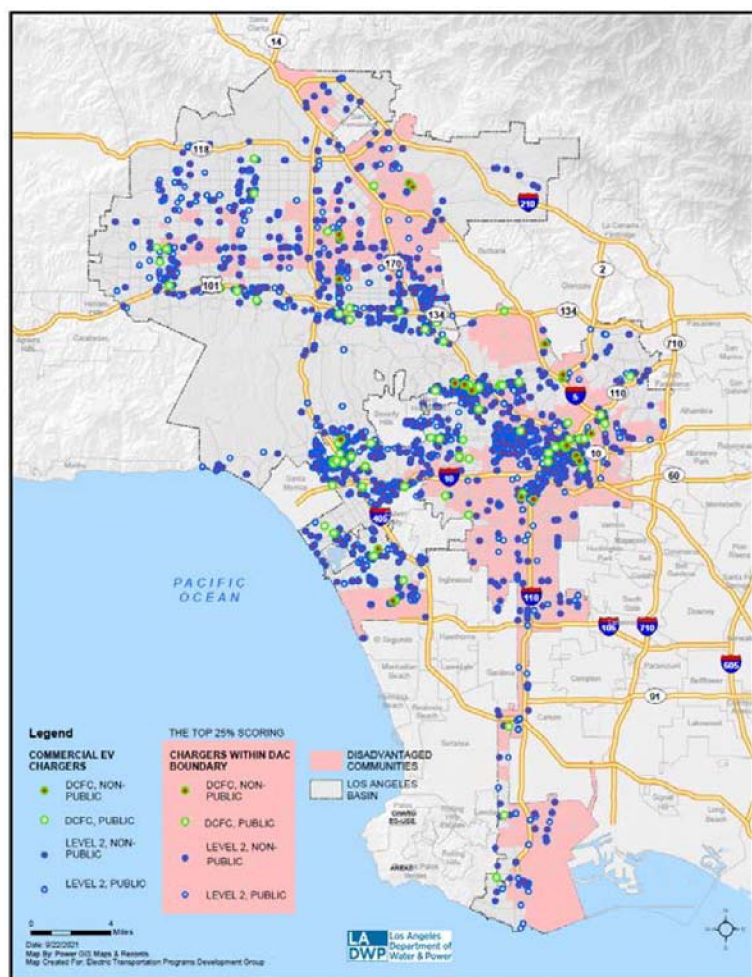
as of 09/01/2021

1,261 Level 2 Charging
Stations Not Rebated
10%



12,306 Level 2 Charging
Stations Rebated
90%

LA's Charging Station Map



	Public	Non-Public	Total
DWP Charging Stations (L2)	90	912	1,002
City-Owned (Non-DWP) L2 Charging Stations	713	694	1,407
DC Fast Charging Stations	255	82	337
Private-Owned Charging Stations (L2)	1,605	9,553	11,158
Total	2,663	11,238	13,904

Access to Public Charging (L2 & DCFC)



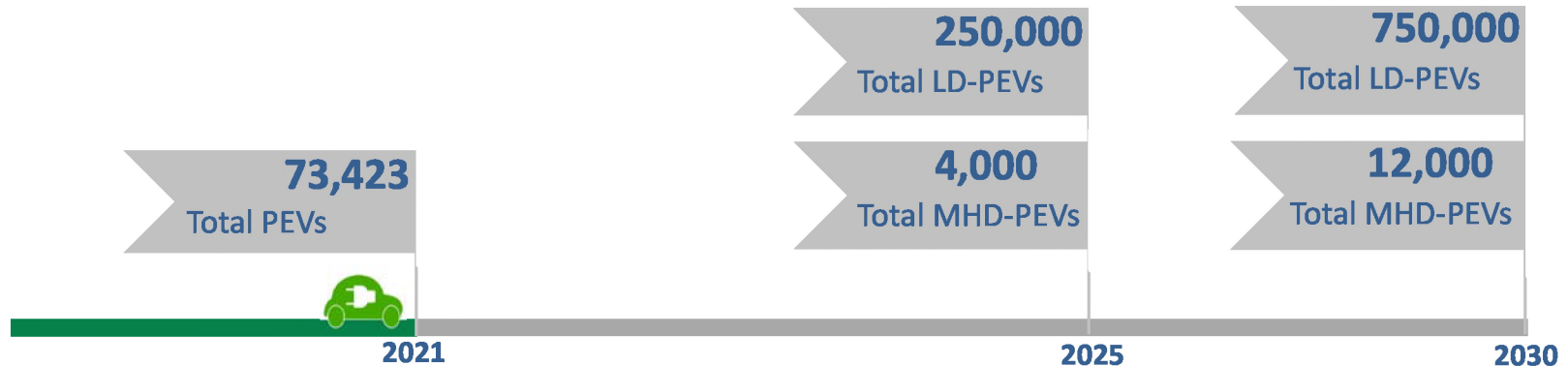
Source: [Evaluating EV Market Growth Across U.S. Cities \(ICCT\)](#)

Los Angeles is the Most EV Friendly City in California

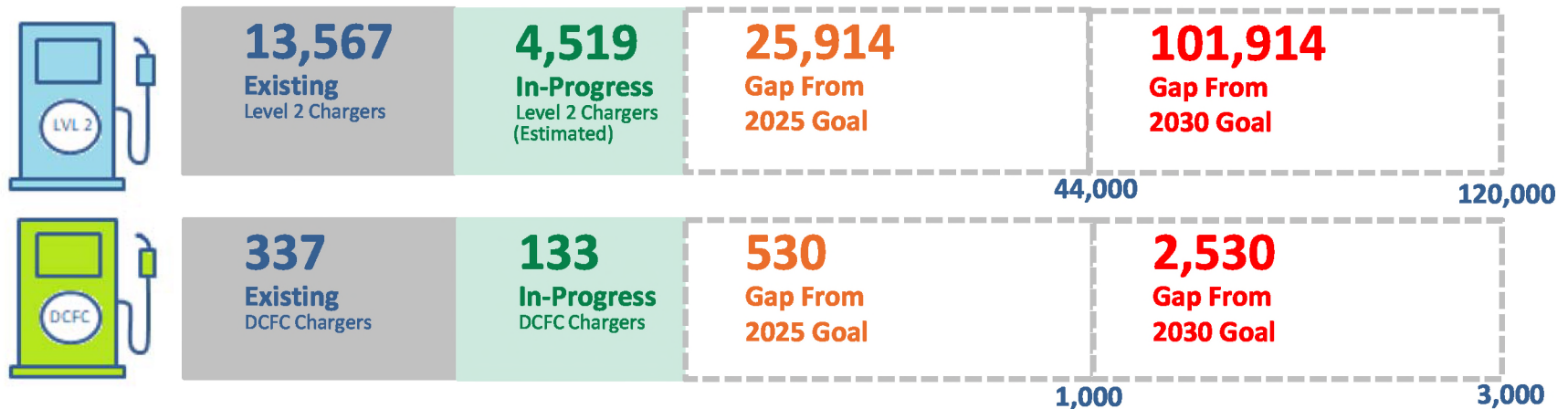
Source: [PlugShare Directory](#)

Revised EV Adoption Goals & Infrastructure Needs

Vehicles



Infrastructure

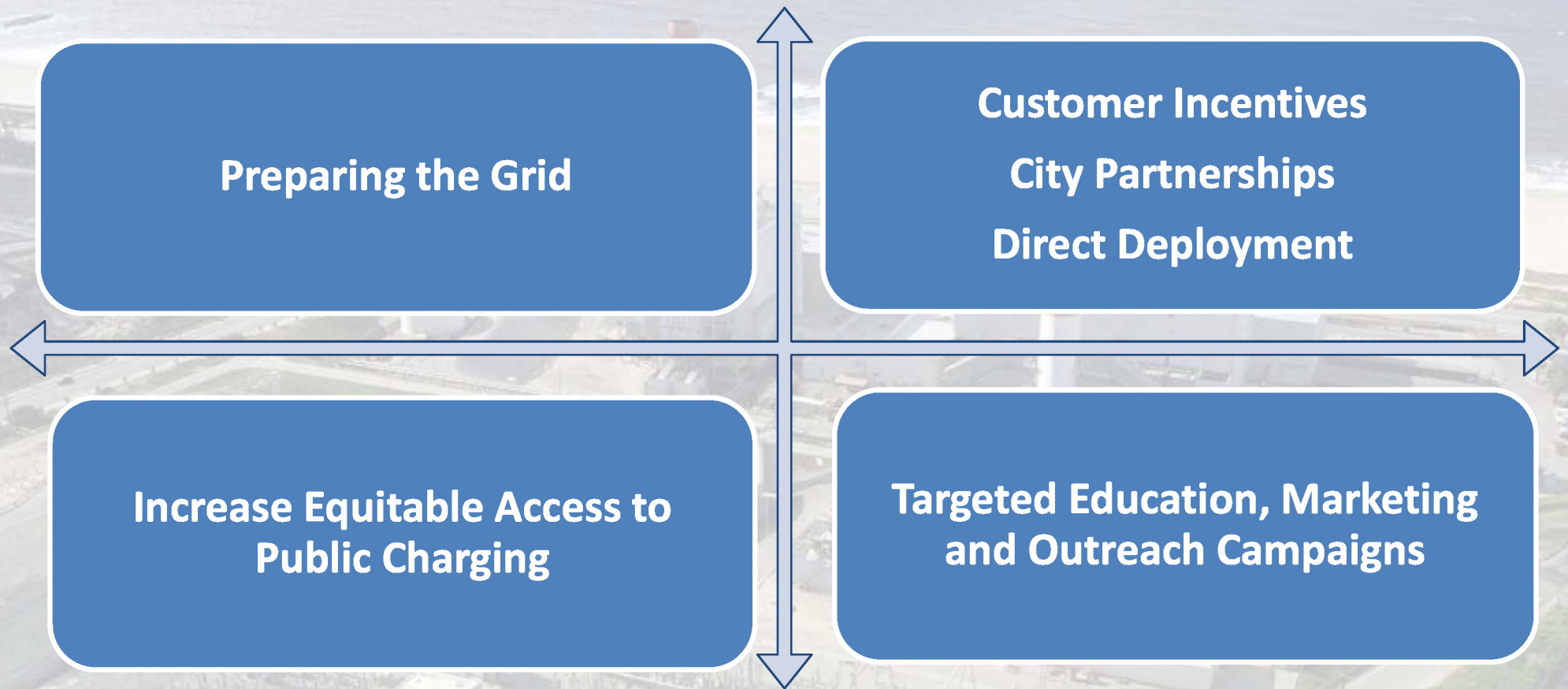


Achieving the New Goals Bridges the Gap needed to Spur Targeted EV Adoption

Strategies and Initiatives to Achieve Revised Targets

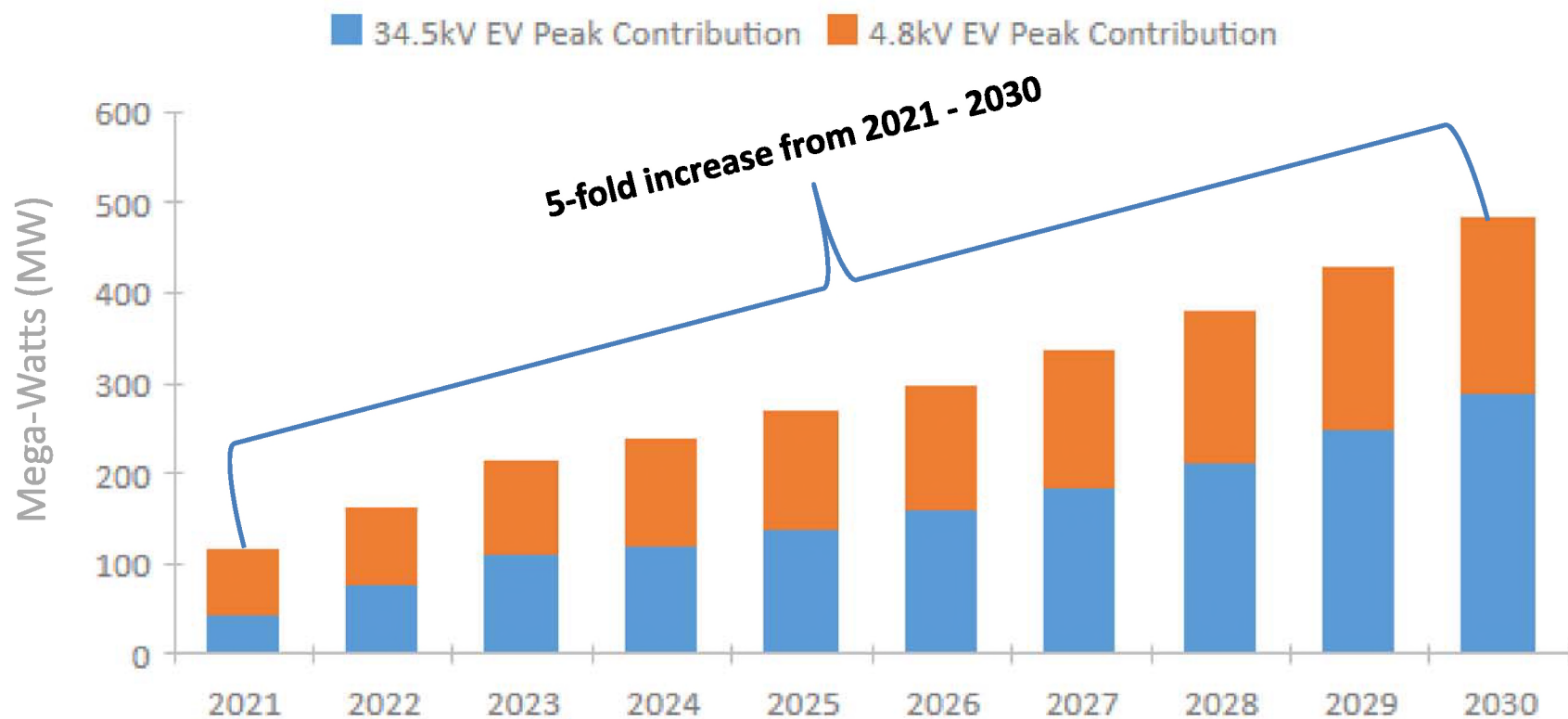
Power Engineering and Technical Services

Electric Transportation Program Initiatives & Strategies



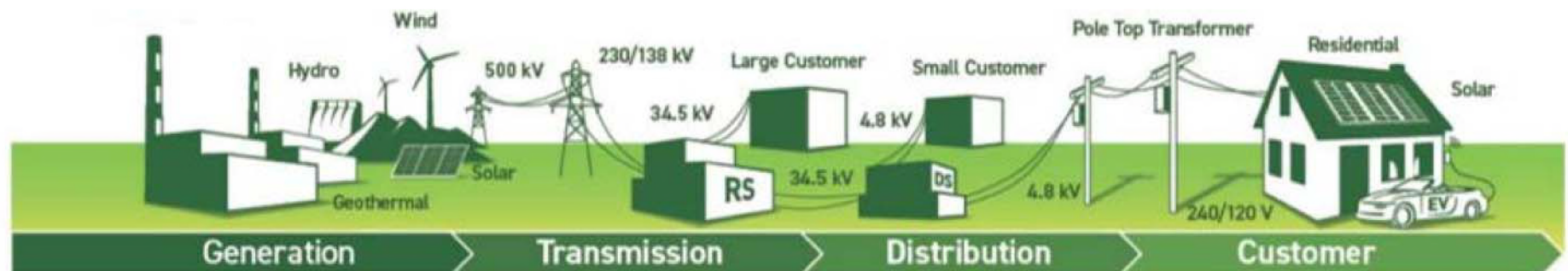
Preparing our Distribution System for EV Loads

Coincident EV Charging Peak Contribution by Voltage Class



Preparing our Distribution System (2022 – 2035)

Component
Upgrade 4.8 kV Feeder Capacity
Expand 34.5 kV Circuit Capacity
New 4.8 kV Distribution Station Capacity
Upgraded and New Receiving Station Capacity
New Distribution Voltage Conversion



Commercial EV Charging Station Rebate Programs

Level 2 Chargers

- Up to \$4,000 per level 2 charging station, with \$1,000 adder in DACs
- **Increases access to charging at MUDs, workplaces, and public destinations**

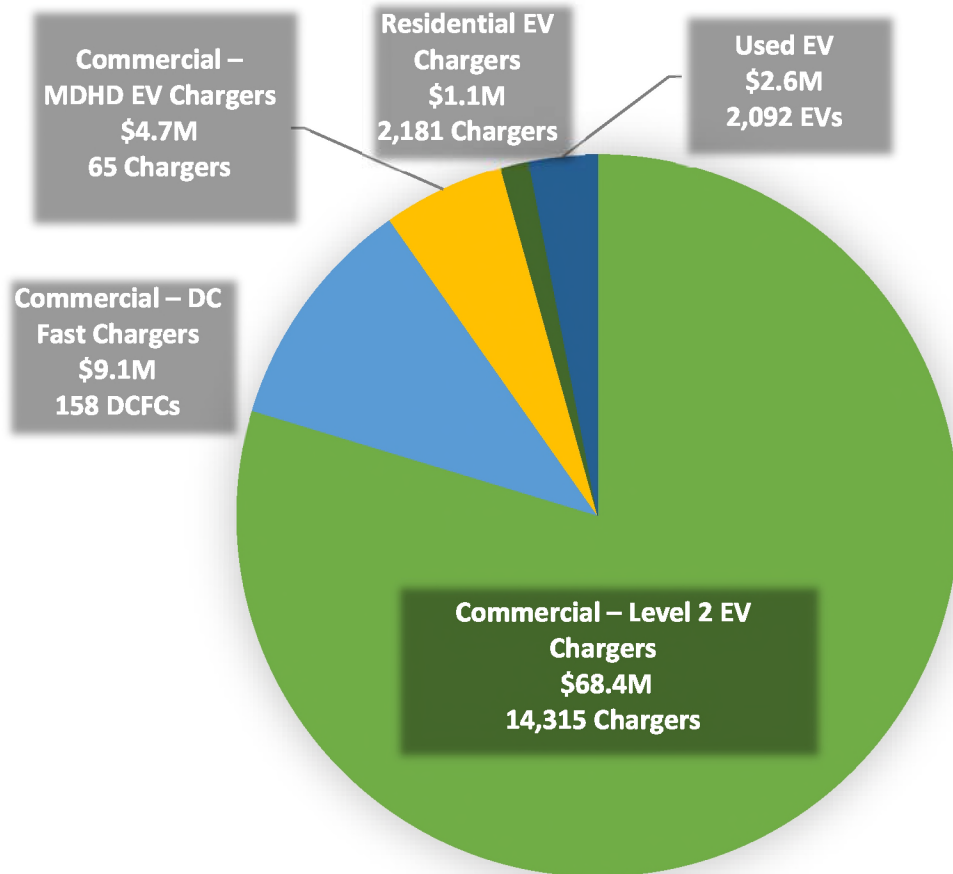
DC Fast Chargers

- Up to \$75,000 per DC Fast Charger
- **Improves access to fast charging and alleviates range anxiety**

Chargers for Medium- and Heavy-Duty Vehicles

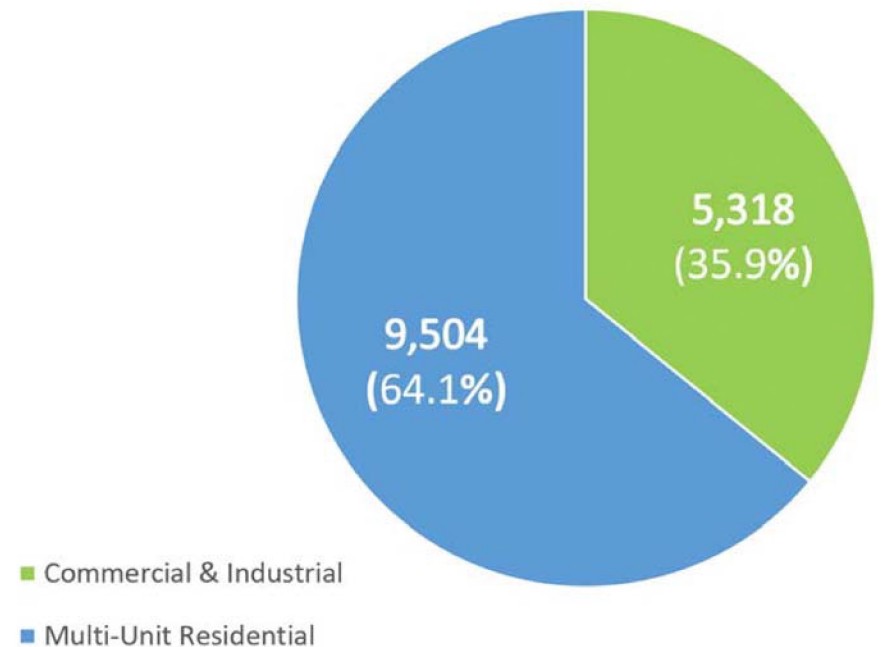
- Up to \$125,000 per charging station
- **Helps electrify one of the largest source of pollution across the transportation sector**

Charge Up LA Rebate Programs Applications



EV Rebates Funding Sum FY 19-20 through FY 20-21 (\$M)

Charging Station Locational Category



Since 2016
LADWP has offered \$97 Million
In Commercial EV Charging Station Rebates

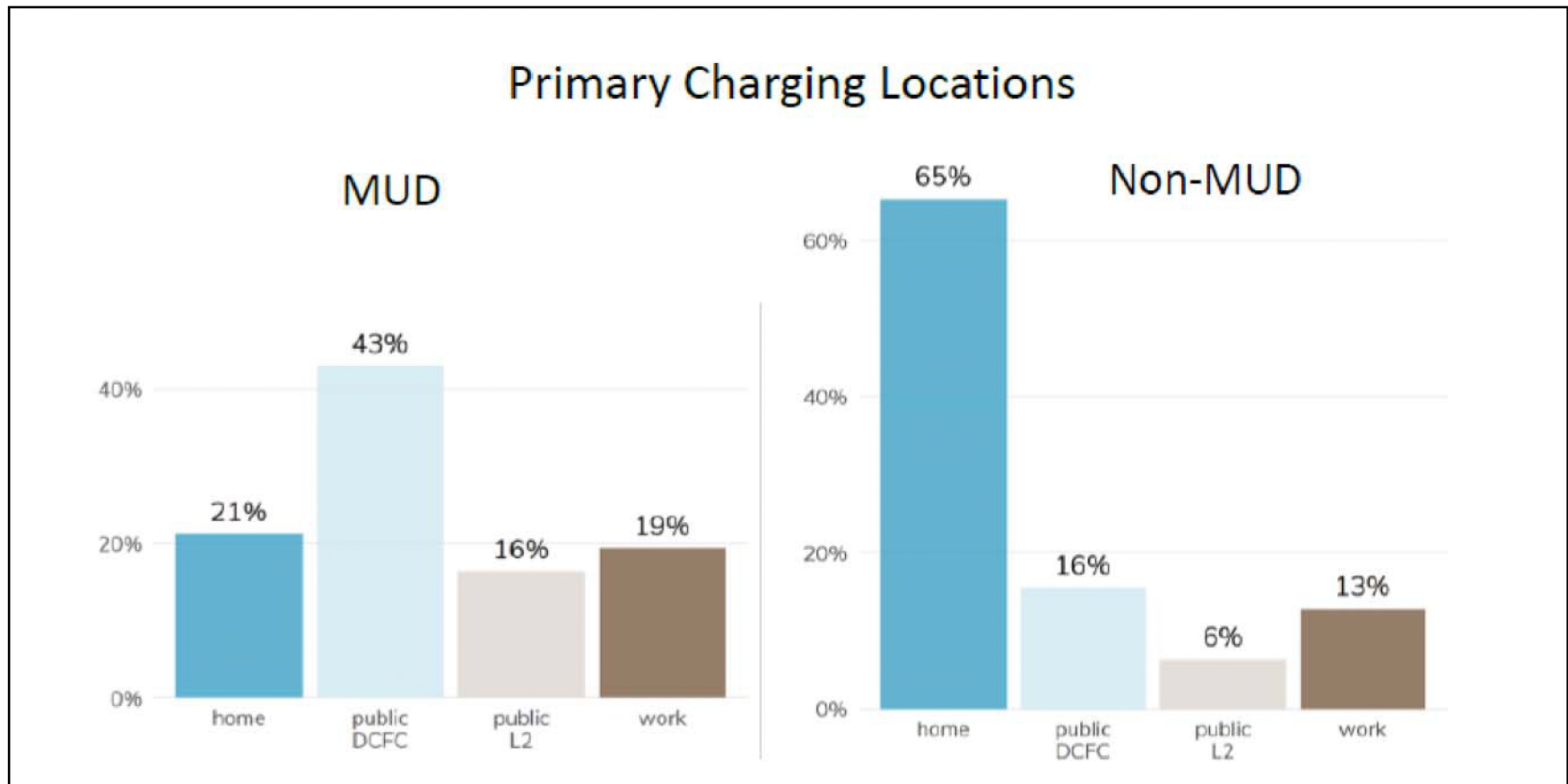
Commercial Level 2 EV Charger Rebate Programs

	LADWP	CALeVIP	SCE	SMUD	Pasadena
Max Chargers per project	40 chargers	10 chargers	4 chargers (Min)	20 chargers	\$50,000 per Site (Combined L2 + DCFC)
Total approved program budget	\$24M / Year	\$12.2M for LA County	\$64M (L2 & DCFC Rebates) over 4 years	\$28.2M Program Lifetime (All programs)	\$480K (both L2 and DCFC)
Rebate per charger (\$)	\$4K or \$5K in DAC	\$3.5K per connector, + DAC \$500 adder, + MUD \$2,000 adder	80% of the estimated cost	\$4.5K	\$3K + \$3K DACs, schools & low-income housing
Source of funds	CARB (LCFS & CCA)	California Energy Commission (CEC) \$150M	Ratepayer	CARB Low Carbon Fuel Standards (LCFS)	Public Benefit + LCFS

Commercial DCFC EV Charger Rebate Programs

	LADWP	CALeVIP	SCE	SMUD	Pasadena
Max Chargers per project	Up to 4 Chargers	4 Max	5 Chargers (Min)	2	\$50,000 per Site (Combined L2 + DCFC)
Total approved program budget	\$6M / Year	\$29M	\$64M (L2 & DCFC Rebates) over 4 years	\$28.2M Program Lifetime (All programs)	\$480K (both L2 and DCFC)
Rebate (in dollars) per charger	\$75,000	\$70K per DCFC charger (with stub-outs)	80% of the estimated cost	\$30K	\$6K rebate
Source of funds	State (LCFS & CCA)	California Energy Commission (CEC)	Ratepayer	CA Low Carbon Fuel Standards (LCFS)	Public Benefit + LCFS

Where Do EV Drivers Charge?

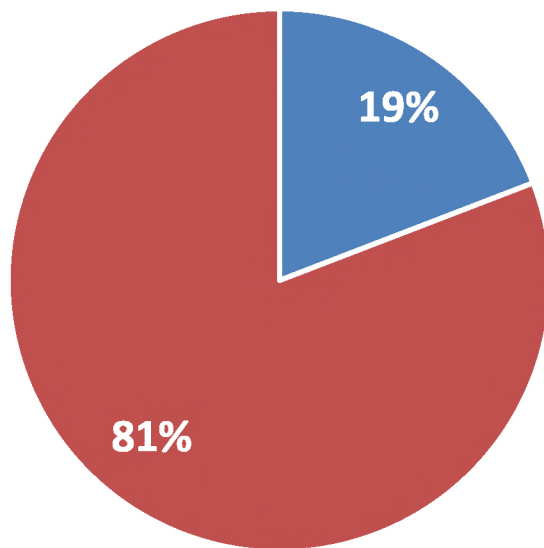


Primary Charging Location for MUD and Non-MUD Drivers.

Source: [UCLA Luskin Center Study](#)

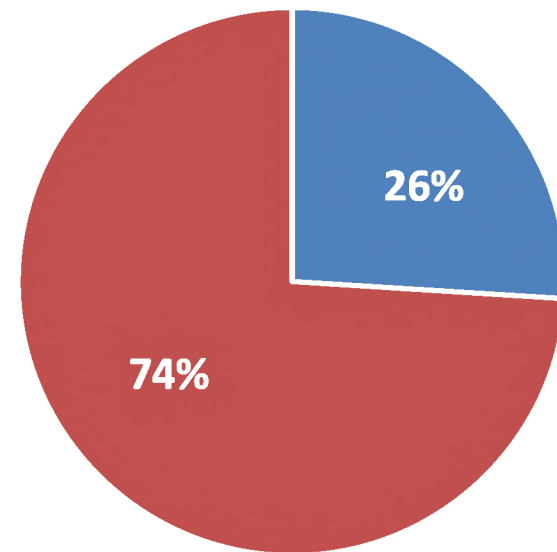
Access to Public Fast Charging (DCFC) in Los Angeles

Commercial EV Charging Stations in LA



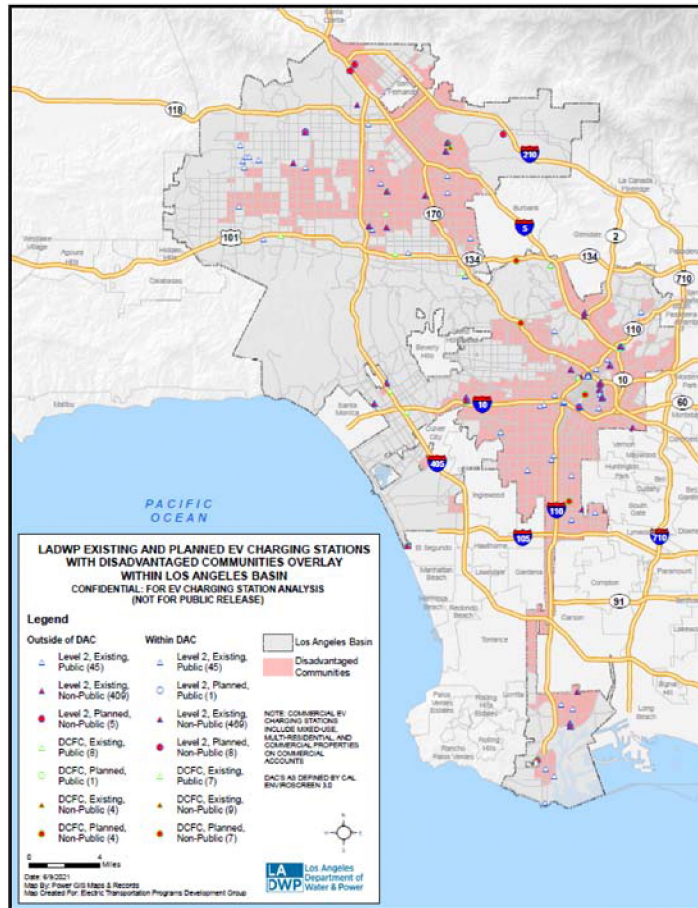
■ Public ■ Non-Public

Public DCFCs in DACs

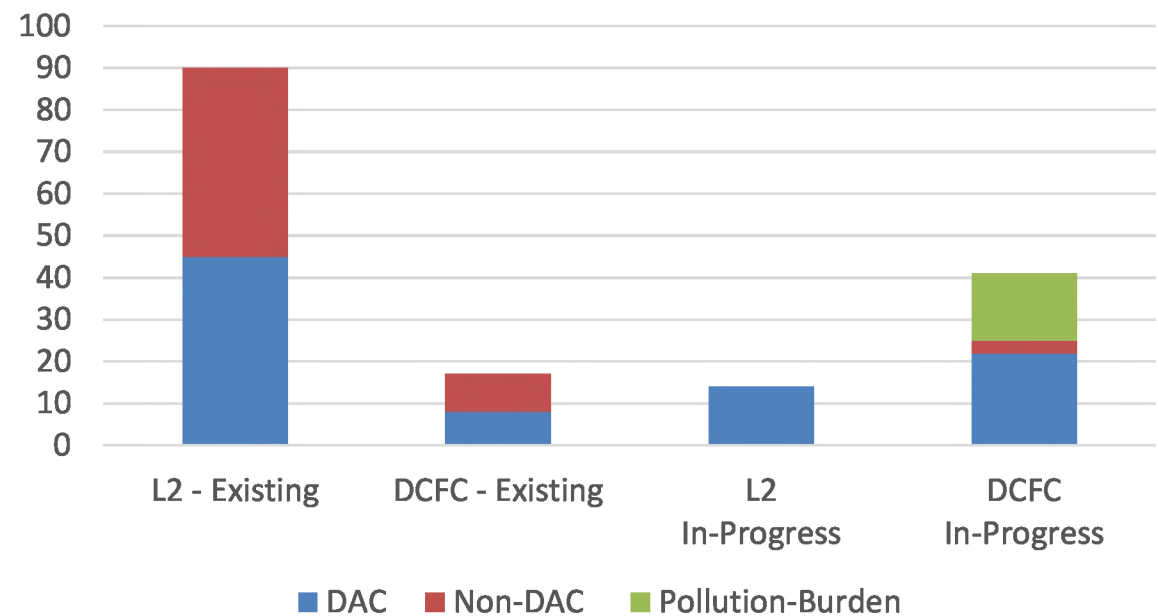


■ DAC ■ Non-DAC

Direct Installs - LADWP Public Charger Installations



LADWP Public Charging Stations



LADWP - to date, has installed 1,000 EV Chargers with 105 open to the public.

Expand LA's Public Charging Network

Action	Facilitate Expansion of Public Charging Infrastructure in Los Angeles
Time frame	(1-9 years)

Actions and Pathways to Implementation:

1. **Target 40% of public charging stations in DACs**
2. Develop attractive cost-based electric rates to attract third party investment
3. Incorporate design elements in rebate programs to encourage installations in DACs/LICs
4. Direct LADWP installs and public charging plazas in DACs
5. Collaborate on city-wide initiatives to improve charging installation & permitting processes

Key Collaborators/Stakeholders: Public Charging Station Operators, EVSE Installers, LADWP, Mayor's Office, Sister City Agencies, Permitting Agencies (BOE, LADBS, LADOT)

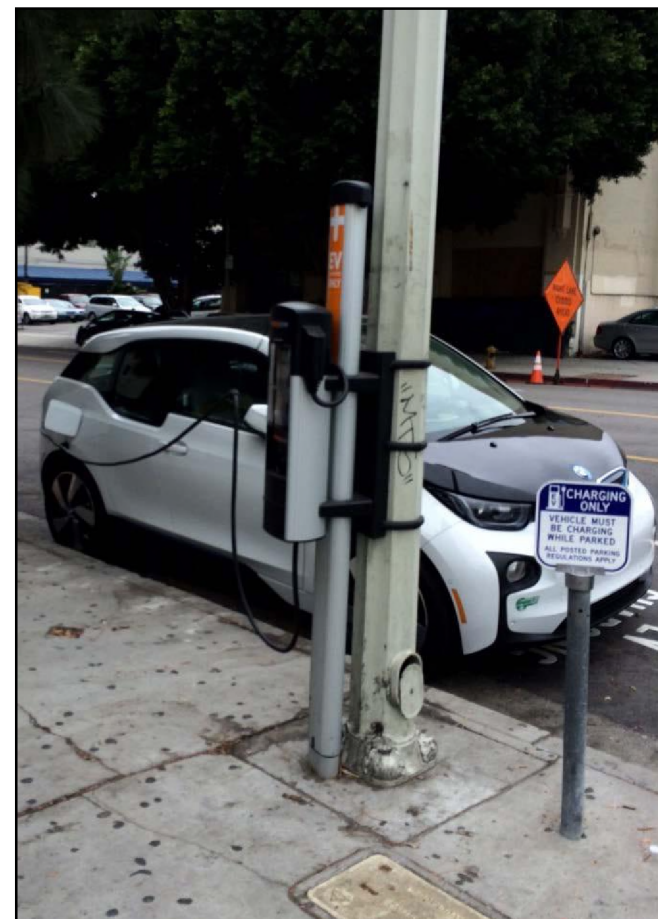
Collaboration with City Agencies

MOUs Executed:

- LAGSD MOU supported over 100 charging stations at City Hall
- Newly Executed LAGSD MOU will support over 30 projects across City of LA
- LADOT Bus Electrification MOU executed June 2021
- POLA Electrification MOU

MOUs In Development:

- LABSL Public Curbside Charging MOU
- LADOT Blue LA MOU
- LASAN



EV Service Design

Power New Business

ELECTRIC SERVICE – Power New Business

Project Types

Industrial



Commercial



Customer Solar



EV



Residential



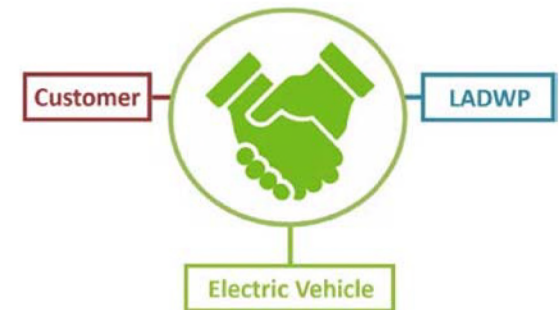
Outdoor Lighting



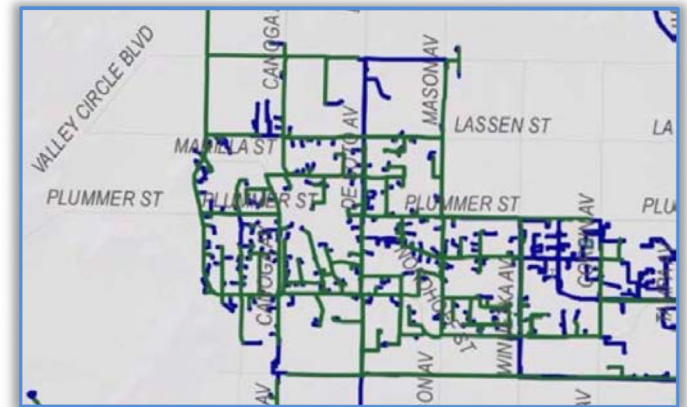
ELECTRIC SERVICE – Power New Business

Tools – Communication - Outreach

- 2019 established dedicated EV design group (6 engineers, 6 Inspectors)
- 2021 Online System maps (LADWP EV page)
- Single point of contact (Submittal to completion)
- Recurring project coordination meetings
- Auto-Emails for project status
- Quarterly workshops
- Campus Recruitment
- Feasibility studies (Low cost option to analyze proposals)
- “Track my Job” on *PowerWMIS*



Overall Job Progress:	
20% Complete	
LADWP Conduit Design & Construction:	
LADWP Conduit Design & Construction Job Created	Completed On 03/03/2021
Conduit Design Approved	PENDING
Conduit Design Received by LADWP Construction	PENDING
Conduit Construction Scheduled	PENDING
Conduit Construction Completed	PENDING



ELECTRIC SERVICE – Power New Business

- LADWP Services -

LADWP defines 3 types of EV Projects			
	<i>Type 1</i>	<i>Type 2</i>	<i>Type 3</i>
Duration for Submittal to Completion	Adequate Facility Letter	Upgrades required	New installation
Targeted	21 Days	365 Days	730 Days
Actual Average	20 Days	226 Days	447 Days

- 3 mo Engineering & Overhead Design
- 4 mo Customer construction
- 5 mo LADWP construction

- + Complex Scope
- + Permitting
- + Coordination

ELECTRIC SERVICE – Power New Business

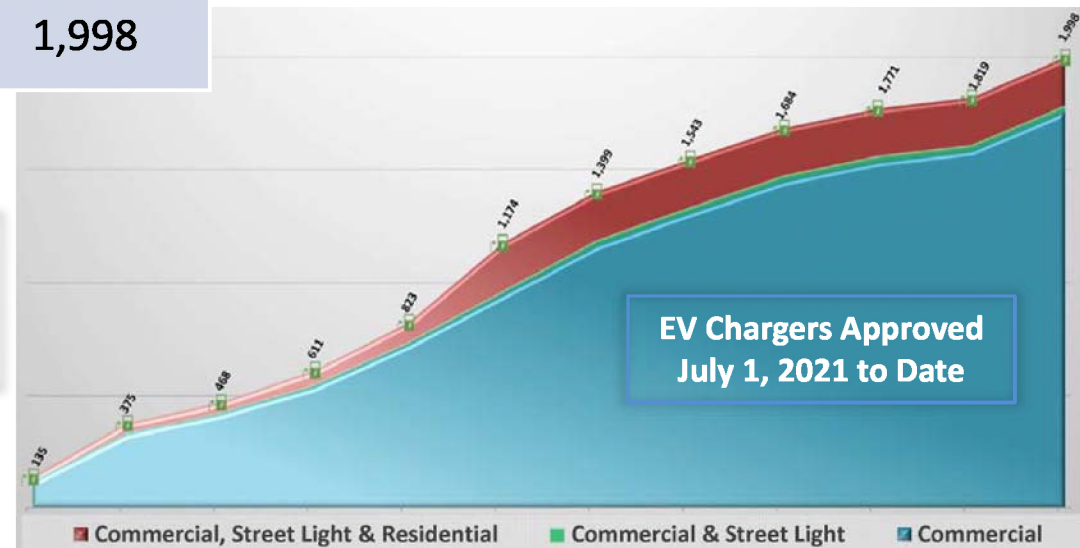
- EV Chargers Approved to Date -

Number of EV Chargers **Approved** for Installation

Year	LEVEL-2	DCFC	Total
FY19-20	10,319	208	10,527
FY20-21	8,872	312	9,184
FY21 to date	1,917	81	1,998

Forecast to meet goals:

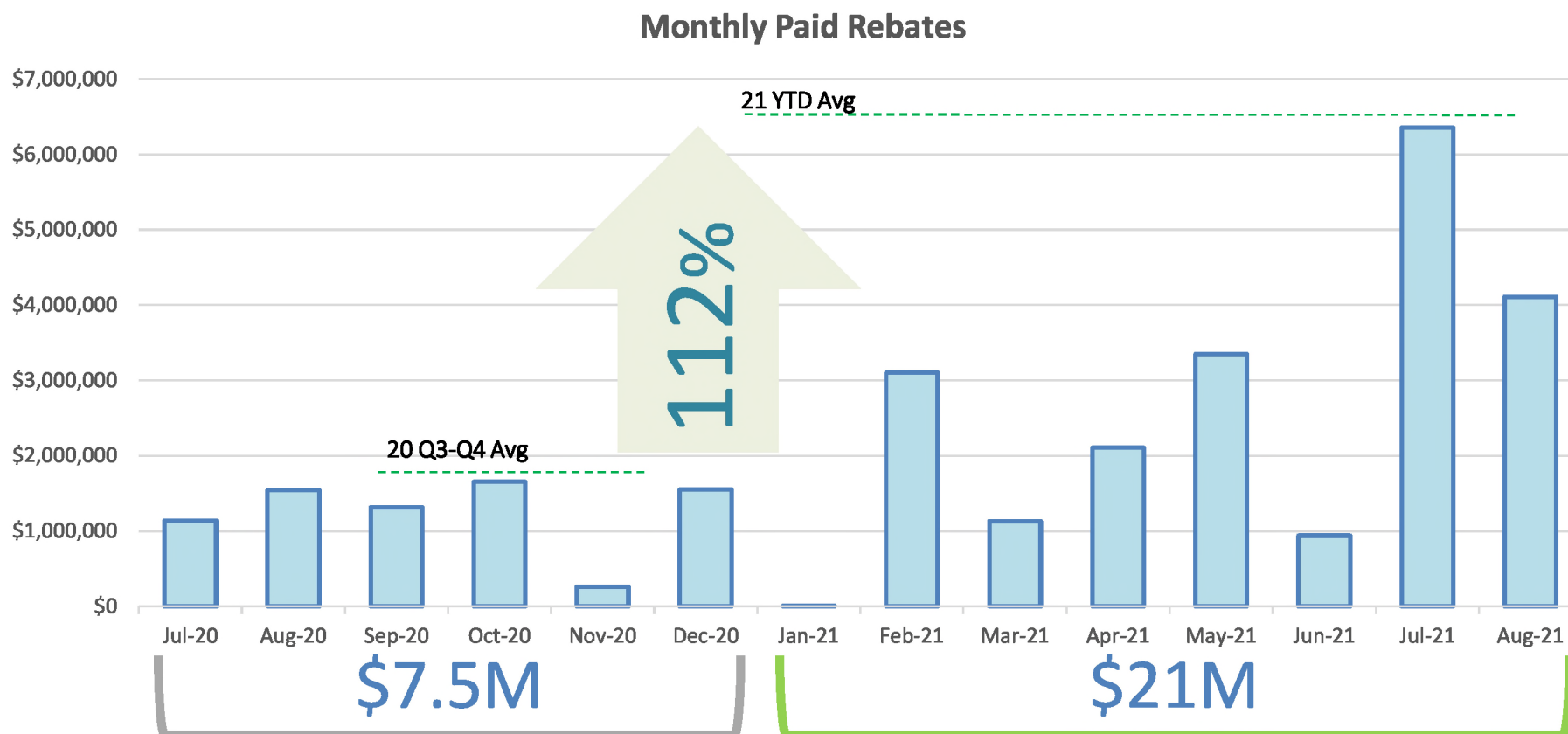
- 10,000 designs approved annually to 2025,
- 15,000 from 2026 to 2030



Customer Rebate Processing

Customer Service Division

Commercial EV Rebate: Performance



Commercial EV Rebate: Performance

366 Active Applications

In LADWP Queue

Review:	6
Awaiting Approval:	29
Final Processing:	45

Pending Customer Action

Pending Permit:	58
Pending Documentation:	57
Pending Submittal:	171

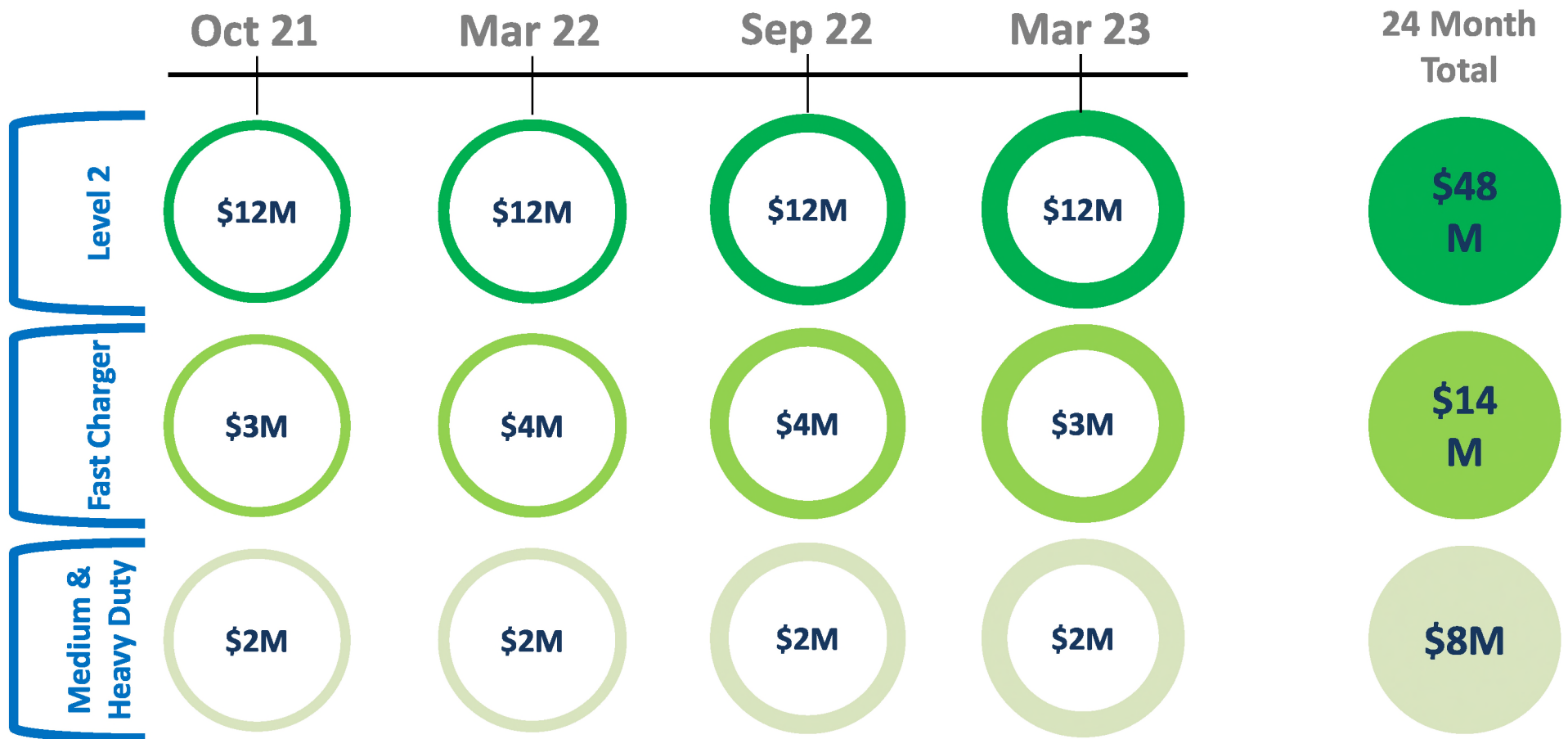
887 Apps Paid

\$60M Paid

12,643
Chargers Installed

40 Projects Cancelled

Commercial EV Charger Rebate Allocation Plan



Charger Rebate: Current Process

Residential

- Single Charger (1 charger/app)
- 2 Page Application
- 6 Documents per Application
- Post-Installation Submittals
- \$500 avg / application
- Direct Approval to Payment

Commercial

- Multiple Chargers (Max 40 chargers/app)
- 15 page application
- 10 Documents/App + 1 doc /Charger
- Pre- and Post-Installation Submittals
- Reservation Process
- Electric Service Upgrades May Be Required Post-Reservation
- Allows 90 days to submit permit + 180 days complete charger installation
- \$40,000 avg / application
- Multi-Step Payment Approval

Current Average

123

Submitted monthly

60

Days Processing Time ^a

Most Recent Allocation

207

Accepted in Last Allocation

164

Days Processing Time ^a

Note: a Processing days by LADWP

Commercial EV Rebate: Processing

Commercial

- Reservation to allow customer to take on large expenditure
- Controls consistent with high dollar value
- Fragmented submittal points across LADWP
- Mail-In only
- 40+ Manual steps in process
- Fragmented metrics
- Manual status updates
- Supervisory QA to validate each application
- Lengthy check issuance process

2020



Improvements To Date

- Added Staff
- Eliminated singular processing points
- Established self-certification checklist for apps
- Provided a Contractor Reference Guide
- Improved processing visibility

Aug 2021









June 2022



Notes: a Processing days by LADWP
b From final submittal

Commercial EV Rebate: Process Improvements Summary

	Deploy interim upload site	Nov-21
	Establish online applications	May-22
	Enhance processing in CRM – Phase 2 of 4	Nov-21
	Establish online contractor portal	Dec-22
	Consolidate/automate communications – Phase 1 of 2	Jul-22
	Revise metrics to accurately identify work and work progress	Dec-21
	Re-align processing unit	Jul-22
	Simplify contractor process – Phase 1 of 4	Nov-21
	Improve the contractor experience- Continuous, Ph1	Dec-21

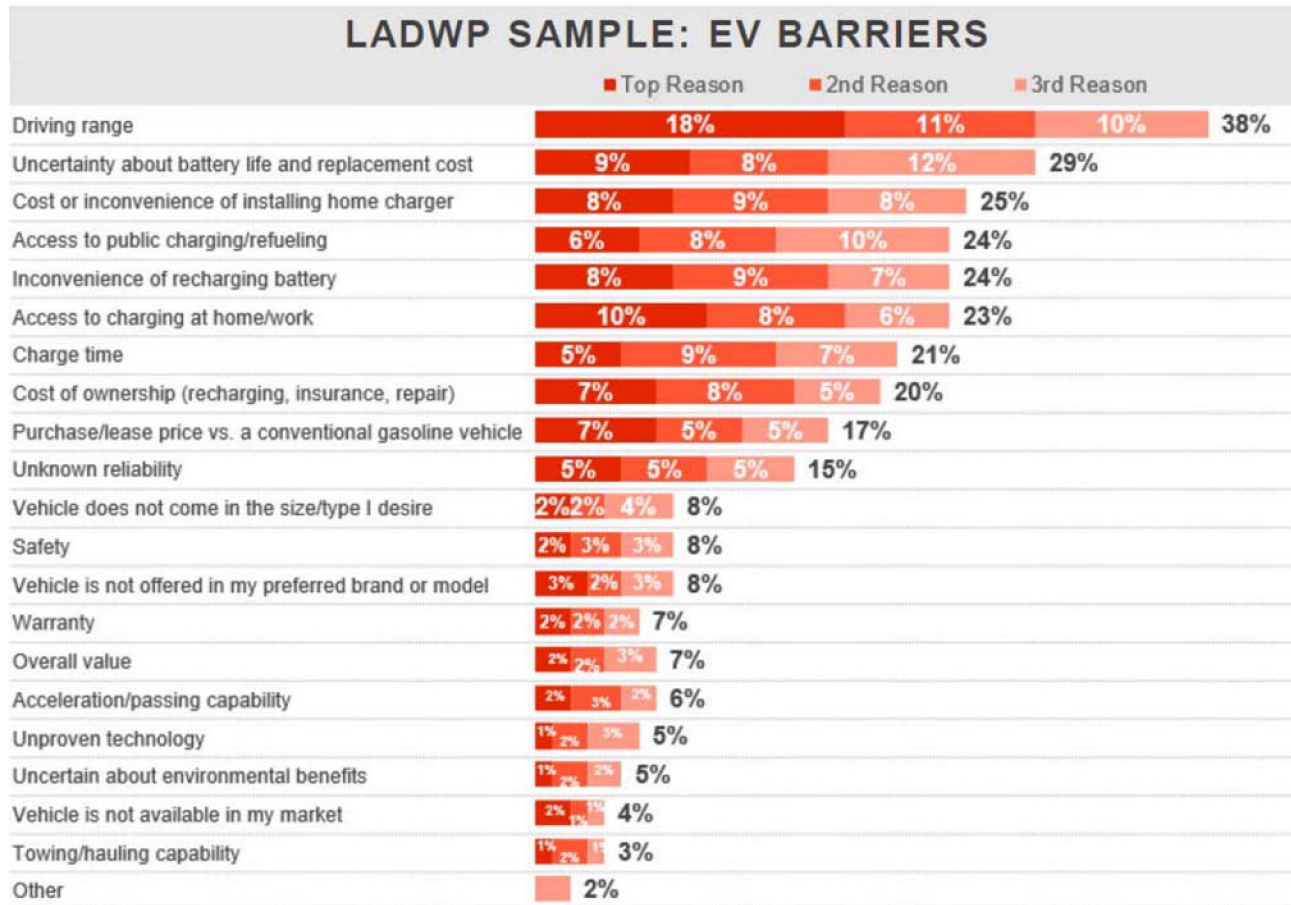
Equity and Outreach

Communications, Marketing and Community Affairs

Challenges to EV Adoption in LA

Top Barriers to EV Adoption

- Lack of customer awareness and education about EVs.
- Access to public EV charging infrastructure.
- Charging Time
- Total cost/inconvenience of installing Home Charging.



Source: EVForward: EV Buyer Survey 2020

2021-22 EV Awareness & Benefits Campaign

Educate on EV benefits and available resources, incentives, & charging

Prepare and support customers interested in becoming EV owners



Friendly, relatable, strategically placed visuals



Messages that educate and address perceived purchase barriers



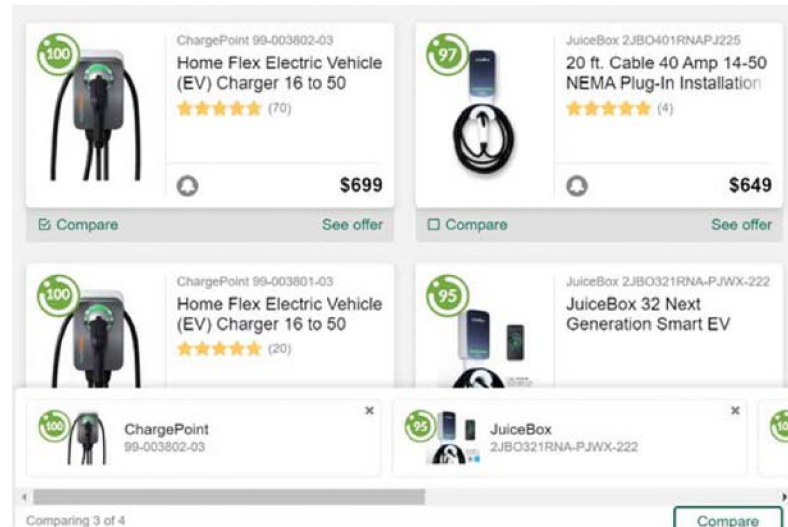
2022 Additional Outreach Activities

Identify

Educational online tool to streamline customer research and purchase process

Leverage

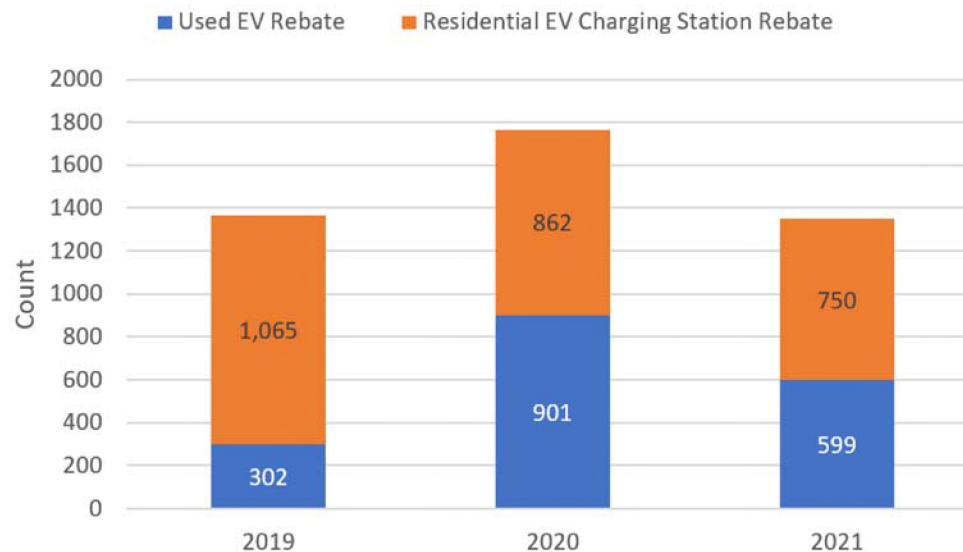
Existing and additional strategic partnerships to increase awareness and participation



2021-22 Used EV & Residential Charger Promotions

Increase

Program participation, specifically targeting DACs and low-income communities



Feature

Enhance incentive amounts that make EV ownership and home charging more affordable

Proposed Improvements

Used EV and Residential Charger Rebate Programs



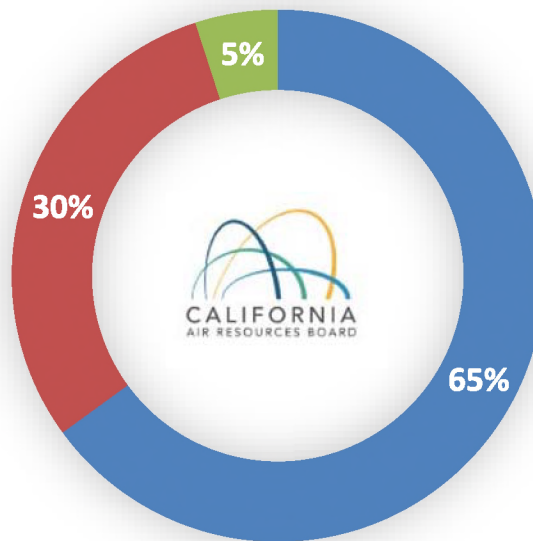
Program	Current Rebate Amount	Proposed Changes (+ Equity Adder)	Total Rebate	Total Rebate Amount (with Low Income Adder)
Used EV Rebate	\$1,500	+\$1,500 for Low Income	\$1,500	\$3,000
Residential L2 Charging Station	\$500 for L2 charger	+\$500 for charger installation +\$500 for Low Income	\$1,000	\$1,500

Backup Slides

Program Funding and Roadmap

Charge Up LA Rebate Programs Funding Sources

Funding Sources



■ LCFS ■ CCA ■ Power Revenue Fund

Status of Current Program Funding Sources

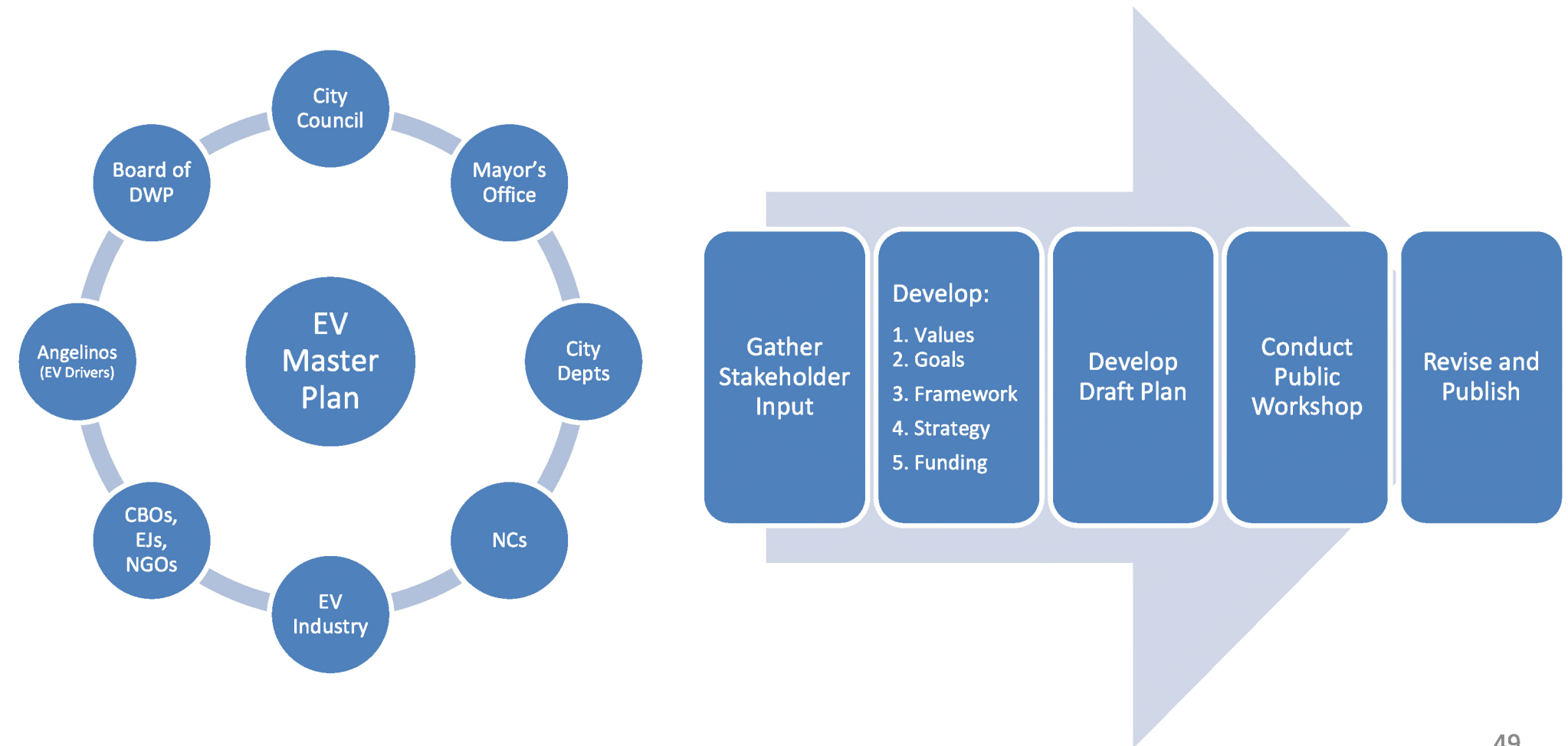
Future Low Carbon Fuel Standard (LCFS) Credits:

- LADWP's CCFR contribution is 35% of our base credits until 2024 and 45% thereafter
- 50% equity spending requirement on the remaining 55% LCFS credits
- Volatile Proceeds due to market conditions

California Carbon Allowances (CCA) Funding:

- Dependent on carbon market and can be repurposed at any time
- Volatile Proceeds due to market conditions
- Competing programs: EE, Solar, Resiliency

Citywide EV Master Plan Development Process



Electric Transportation Program Initiatives

Category	Description
Customer Vehicle Incentives	<p>Monetary incentives/rebates for our Customers to purchase electric vehicles (EV)</p> <ul style="list-style-type: none"> - Currently we are contributing to the State's light-duty vehicles incentive program CA Clean Fuel Reward Program - Continue offering rebates for purchasing a Used EV & incorporate an added incentive for low-income customers
Customer EV Charging Infrastructure Incentives	<p>Rebates for installing EV charging stations on customer properties, including; commercial workplace, residential single-family, MUD, Public Charging, Fleet Charging, etc.</p>
LADWP EV Infrastructure Deployment	<p>LADWP Built and Operated EV charging infrastructure for both Fleet and Public Charging Plazas focus on increased access in DACs</p>
Preparing the Grid	<p>Distribution System upgrades, rates and programs needed to enable and align EV charging loads with the Grid</p> <ul style="list-style-type: none"> - Distribution / Receiving Station Upgrades - Circuit/Feeder Upgrades - Commercial EV Contract Rates - Vehicle-to-Grid Integration and Managed Charging
Education, Equity and Outreach	<p>Develop and Implement Campaigns & Programs targeting communities in the City that have a lower penetration of EV adoption and are underserved regards to Access to charging infrastructure</p>

LADWP Rebate Program Offerings



Current Staffing Level Supporting the Electric Transportation Program

Group	2018-2019	2019-2020	2020-2021	2021-2022
EV Service Design	4	6	8	10
Program Development	5	6	7	7
EV Infrastructure Design	3	4	5	6
Distribution PIng/Dev	2	3	4	5
Rebate Processing	2	4	6	8