



City of Palo Alto

Utilities Advisory Commission Staff Report

(ID # 14568)

Meeting Date: 9/14/2022

Report Type: VII. NEW BUSINESS

Title: Discussion and Overview of City Electric Vehicle Programs and Activities

From: Director of Utilities

Lead Department: Utilities

Recommendation

This is a discussion item and no action is requested.

Executive Summary

The Utilities Advisory Commission has requested updates on the City's progress in encouraging electric vehicle adoption in Palo Alto. The attached presentation provides an overview of the City's current and prospective actions on electric vehicles. Additional information is provided in regular updates in the Utilities Quarterly Reports. The Q3 report is being published at the August UAC meeting. Section 6.1.2 contains a detailed overview of the City's EV programs.

Attachments:

- Attachment A - Presentation



EV Status Update

Utilities Advisory Commission

September 14, 2022

www.cityofpaloalto.org/fiscalsustainability

Overview

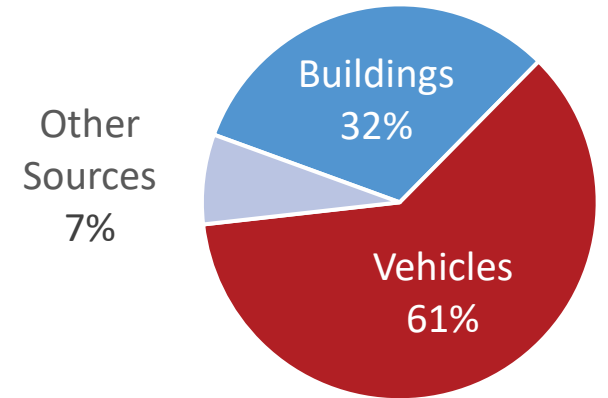


- City has several EV charger programs, mostly funded by Low Carbon Fuel Standard Funds
- Primary focuses: citywide EV promotion, expanding charger access in multi-family buildings
- Additional focuses: non-profit EV charger access, some workplace charging, some DC fast charging
- Working on managing grid issues
- Areas of future exploration: How to scale programs, additional services to provide, grid issues.

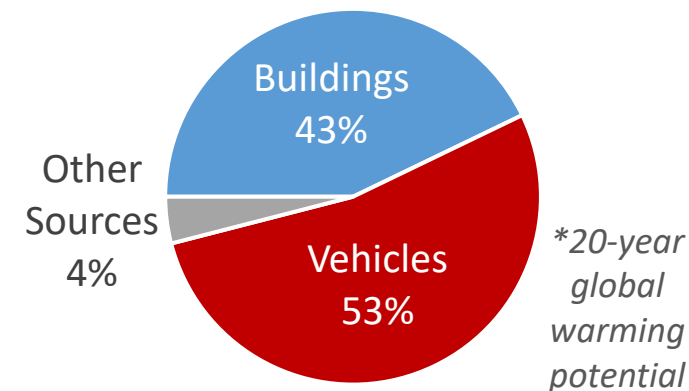
S/CAP Impact Analysis Findings - Transportation

- Transportation is 61% of total remaining emissions (53% with upstream emissions)
- Estimated 29% resident emissions, 35% commuters, 36% visitors
- Impact analysis assumed 63% transportation emissions reduction
- Reduction pathway: 1) travel less (Mobility), 2) use single-occupancy cars less (Mobility), and 3) more electric car trips (EVs)
- For the fleet of residential EVs, this means :
 - 44% of vehicles in Palo Alto are EVs by 2030 (50% of single-family vehicles and 33% of multi-family vehicles)
 - To achieve this, we need 85% of new annual vehicle purchases to be EVs by 2030. Used EV supply must grow too.

Without Upstream Emissions

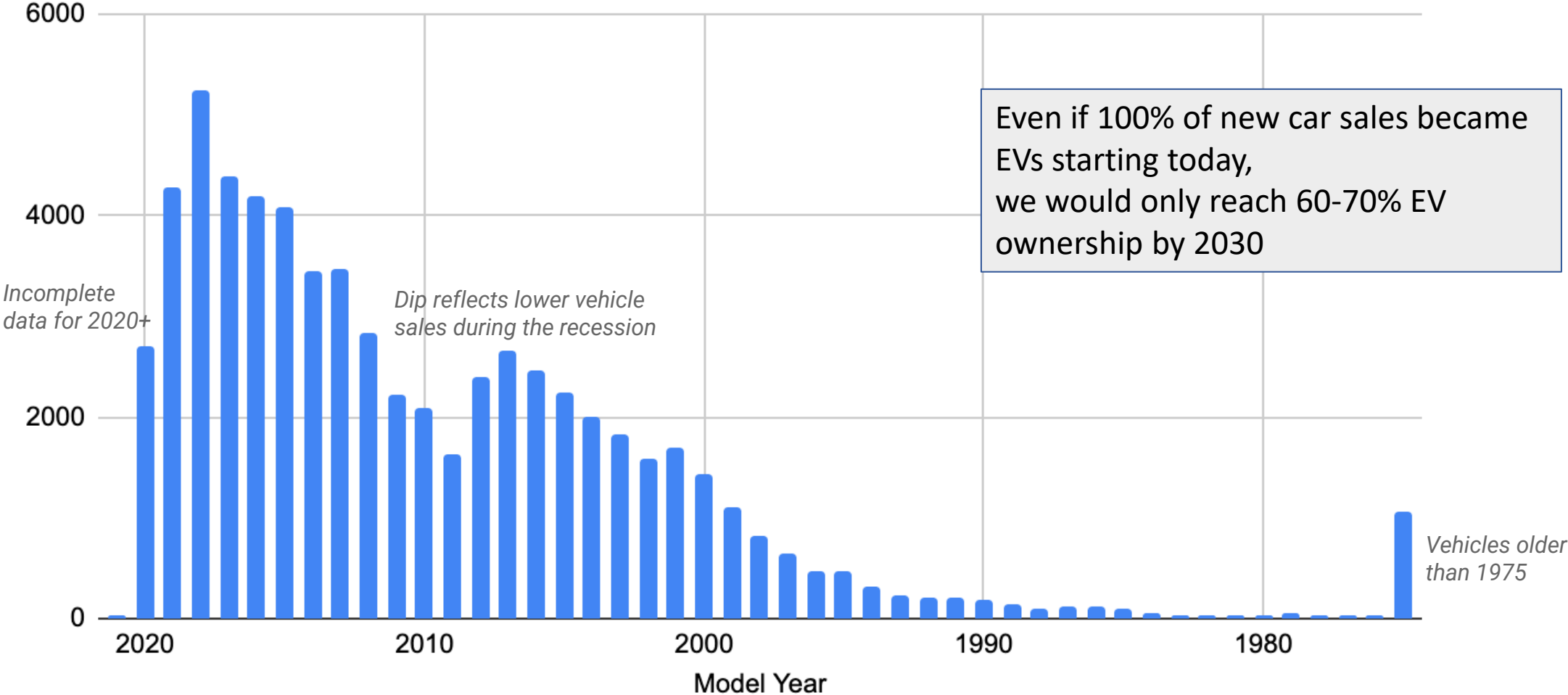


With Upstream Emissions*



Vehicle Turnover and Replacement

Palo Alto Registered Vehicles (2020) by Model Year



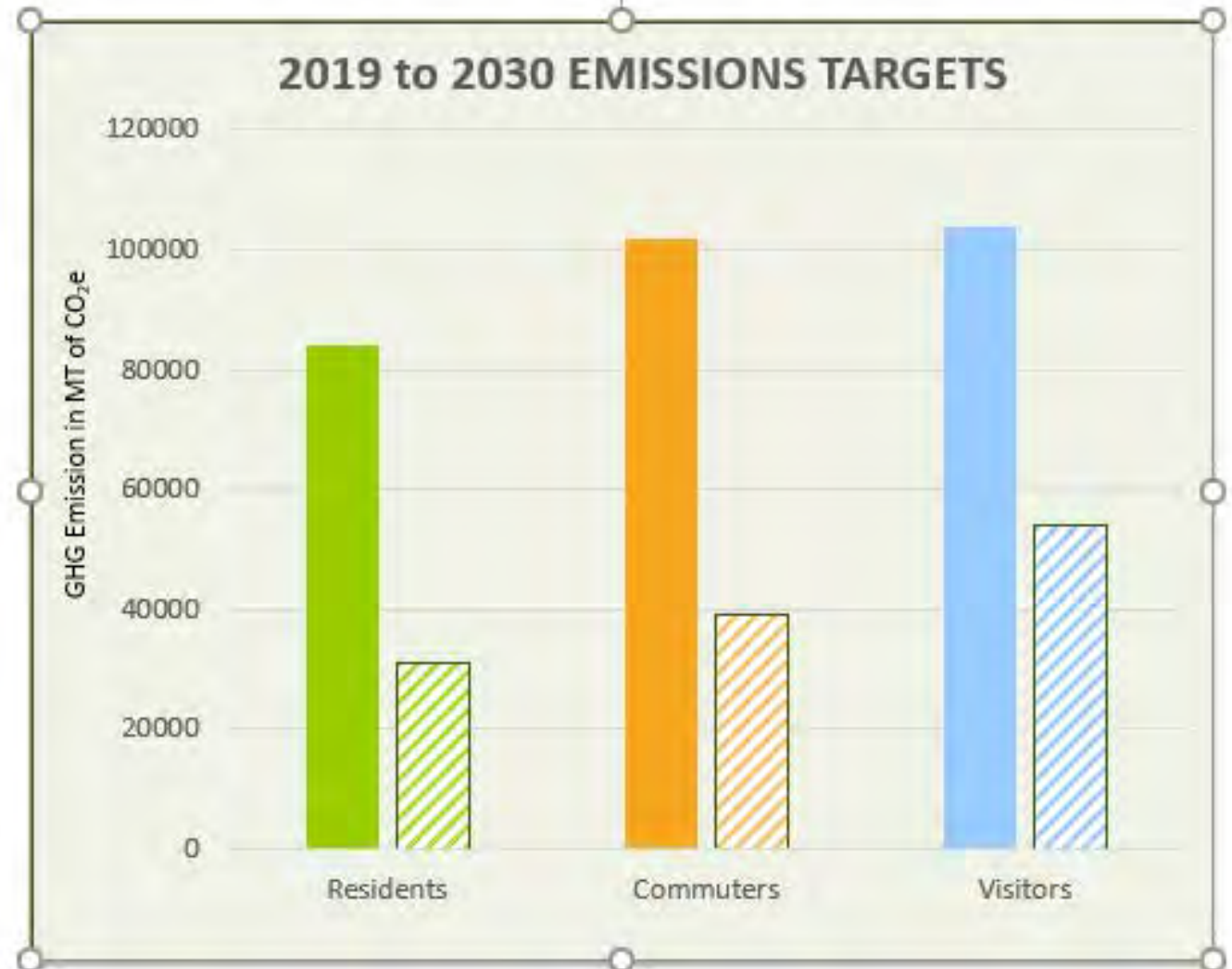
S/CAP Impact Analysis Findings - Transportation

2020 ROAD TRANSPORTATION EMISSIONS

■ Residents ■ Commuters ■ Visitors



2019 to 2030 EMISSIONS TARGETS





Making Progress – Ideas and Programs

- S/CAP EV policies not updated yet
- **Residents** are the primary focus to-date, especially multi-family. Provide resources, outreach, incentives, EV charger program
- Ideas for making progress in other ways:
 - **Commuters** - could we make progress w/ major employer partnerships? (New position approved)
 - **Visitors** - could we support regional action / regional partnerships? (FY 2023 approved new staffing could help)
 - Coordinate w/ Office of Transportation
- Vehicle incentives/regulations driven by CA and US governments
- EV charging network a great focus for local government



EV Chargers – Grid Impacts (Preliminary Insights)

- Average older mixed-fuel home = 3 kW peak load, whole home
- Many Level 2 chargers can easily exceed 3 kW by themselves
- 5000+ EVs in Palo Alto (at least 60% are long-range vehicles), only 433 charger permits (including commercial). Likely indicates widespread unpermitted installation.
- Per State law, single family charger permits are issued “over the counter,” meaning no utility review is allowed. Transformer impacts identified only after the fact
- Discussions about these issues are happening internally and within the S/CAP Committee, no policies yet. Study in progress.
- Grid modernization efforts will relieve these issues over time.



Residential EV Promotion

CCFR ([California Clean Fuel Rewards](#))

- Statewide Point of Purchase rebates for new EVs
- CPAU pays into program with LCFS funds
- Participation: 1,336 Palo Alto residents

Marketing, Education & Outreach

- Over 2 dozen online and in person workshops and events
- EV Brochure
- Updated EV Infographics

Transformer Upgrade

- Rebate of up to \$10,000

Upcoming:

Community e-Bike Lending Library



Multi-Family Residential Charging Programs

- EVs save money over gas vehicles, but home charging access is important. Multi-family charging is rare.
- EV Charger Technical Assistance Program provides:
 - Incentives for chargers and system upgrade costs
 - Technical assistance
- Funding source: Low Carbon Fuel Standard funds. Roughly \$8.8 million available for 90 sites over 3 years
- Program goal: expand charger access to 10% of multi-family households (about 1100 units) by 2025



Multi-Family Residential Charging Programs

- 108 enrolled and actively proceeding
 - Potential EV charging access for over 4,000 MF units (38% of MF households)
 - 58 in the site evaluation, business case development, and project design phase
 - 27 obtaining bids
 - 14 ready to submit permits
 - 9 permits submitted / not issued yet
 - 6 completed projects → 13 L2 ports, serving 323 units



Multi-Family Residential Charging Programs

Marketing strategy

- Focus on the top 5% of buildings (44 buildings of 803) represent 32% of the units (3800)
- Also focusing on affordable housing. 1600 units exist at 35 sites, of which 5 properties have 100+ units
- Most low-income Palo Altans live in multi-family buildings. The majority do not live in affordable housing.

Value Proposition

- Trusted, neutral advisory services
- Comprehensive Technical Help (site evaluation -> permit submittal)
- Incentives (both chargers and distribution system upgrades)



Multi-Family Residential Charging Programs

Ideas/issues for future exploration

- Can program funding be reconfigured to be less reliant on incentive funds and scalable to all buildings?
- How do we incorporate alternative transportation promotion and bicycle infrastructure?
- Would direct installation services be valuable?
- Can we “build for the future,” sizing upgrades to cover EV chargers + electrified units?
- How much building electrification could we feasibly incorporate?



Non-Residential Charging Access Programs

- Focused on non-profits, with incentives, technical assistance provide
- Limited funding for for-profit facilities via CALeVIP regional partnership
- Up to 20 DC fast charger projects also funded
- 41 projects in progress → 56 L1, 419 L2, 14 DCFC
- 8 Completed projects → 79 L2 and 2 L2 @ 4 schools & 4 non-profits

Areas for Future Exploration

- Various areas of exploration for multi-family programs
- How to promote EV access to low-income residents
- Regional partnerships to promote EVs in the Bay Area
- How to promote EV charging in workplaces in a fiscally sustainable and scalable way
- How to manage grid issues in single-family areas

