

 PASADENA



Zero-Emission Bus & Shuttle Deployment - UTILITIES

10 Best Practices of Municipal Utilities

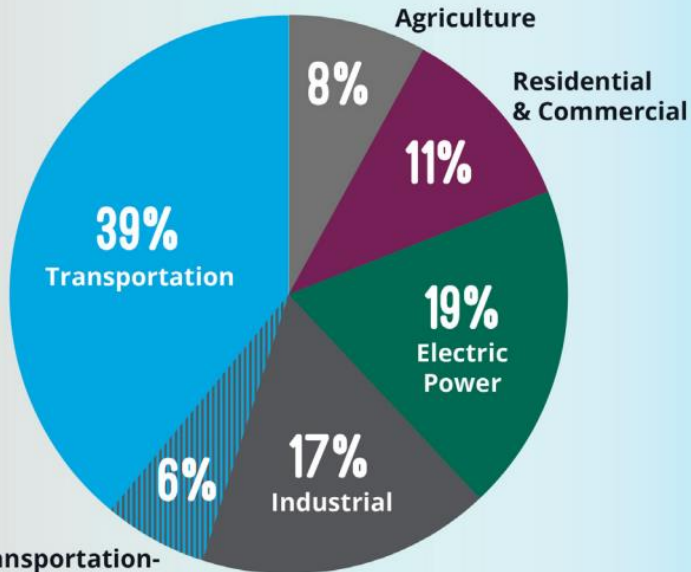
October 10, 2019





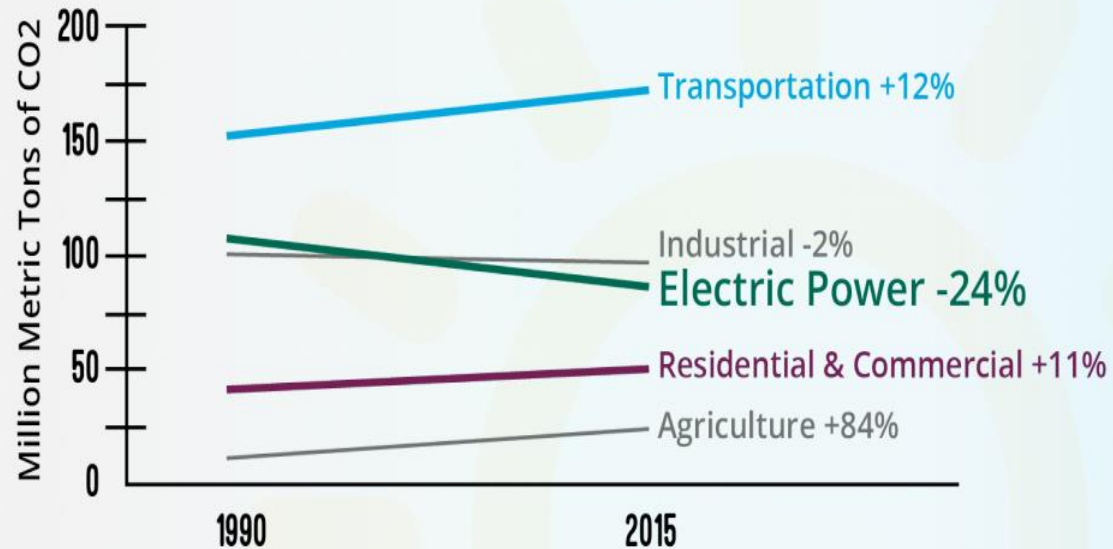
GHG Emissions Reductions

Pasadena Water and Power



Transportation-Related Industrial

CALIFORNIA'S GHG REDUCTIONS ARE LED BY THE ELECTRIC SECTOR



Source: CARB 2015

- 45% GHG from Transportation
- Electric Industry leads in GHG Reduction

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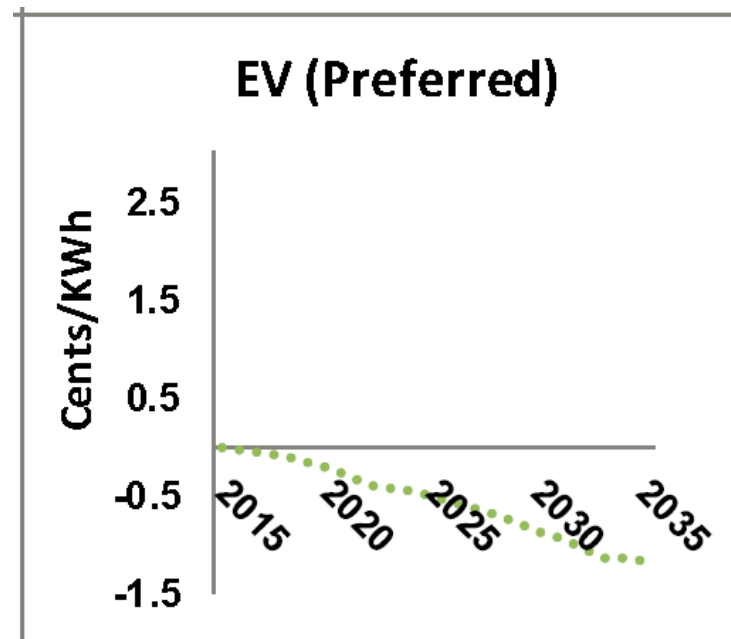
Why EVs?

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Electric Vehicles (EVs) utility role...

- Promote a green environment. (75% less GHG than gas).
- Promote customer efficiency
 - Less than \$1 per gallon of gas
 - All Customer Save Money
- Integration of renewable resources.
- Every BEV = 1/2 a house night load.
 - (245-kWh per month average)

**Key Concept: Lots of EVs,
Charge at the Right Time**





#1 EV Education Outreach/Demos

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POWER UP PASADENA | PWP Commercial Customers



\$3,000 REBATE per unit/dispenser—Level 2 Smart Charger
(\$50,000 max per site)

OR DOUBLE THE REBATE
\$6,000 for the following types of installations:

- Affordable Housing (Serving More Than 80% Income Qualified Occupants)
- Provide Charging Access to the Public

Be a smart charger—charge between 10am to 2pm and program your EV charger from midnight to 6am
For more information, visit PWP.com/EV

Limited offer - based on available funding. Certain qualifications apply and standard connector plug required.






#2 Support Municipal Fleet

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- LADOT purchased 4 EV DASH Busses
- Metro Purchased 100 EV Busses.
Converting LA Orange Bus Line and Silver Line to EV.
- Port Of LA (POLA) doing a 5 yard truck demo





#3: Support EV Purchases

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- Rebates for Customer EV Buys New/Used
- New State Utility Program: “Clean Rewards Program”
- For Transit: Work with EV Advocacy Groups like CalETC and Calstart.
- Keep up on grants (CARB/AQMD, CEC, FAA, LCFS etc.)





#4: Support Customer Chargers

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- **Commercial Customers**
 - > Workplace, public, and multi-unit dwellings
 - > Up to \$6,000 per charger (Up to \$50,000 per property)

Transit Challenge:

- > 1st Time,
- > Variation of Chargers
- > Transit/Shuttle Co. Needs





#5: Be an Example – Muni Fleet

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#6: Install Infrastructure

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City EV Infrastructure (Projects)

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- Yards – 55 L2 & 2 DCFC Chargers



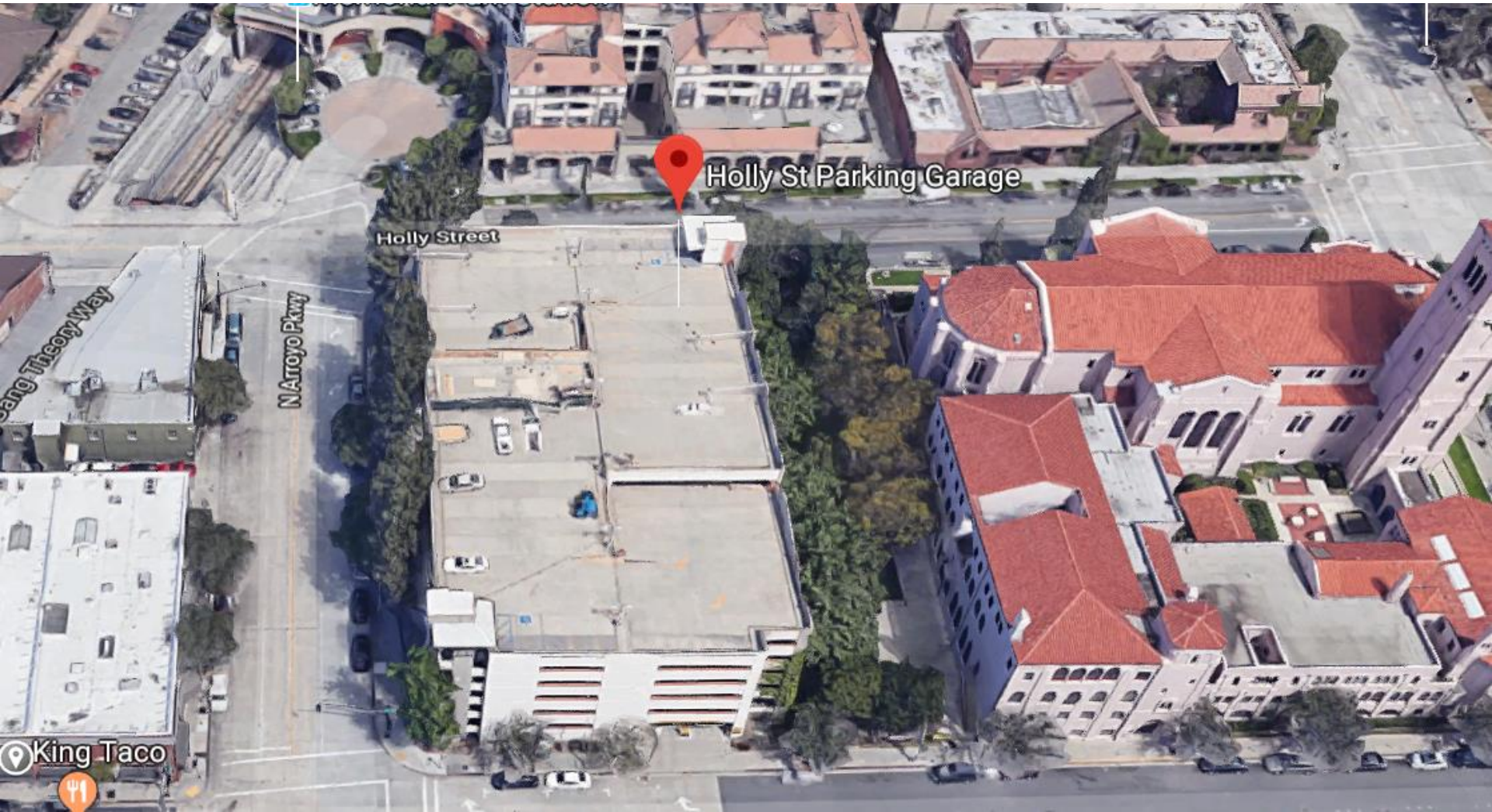
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City EV Infrastructure (Projects)

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- Holly Garage – 25 Fleet + 25 Public Chargers

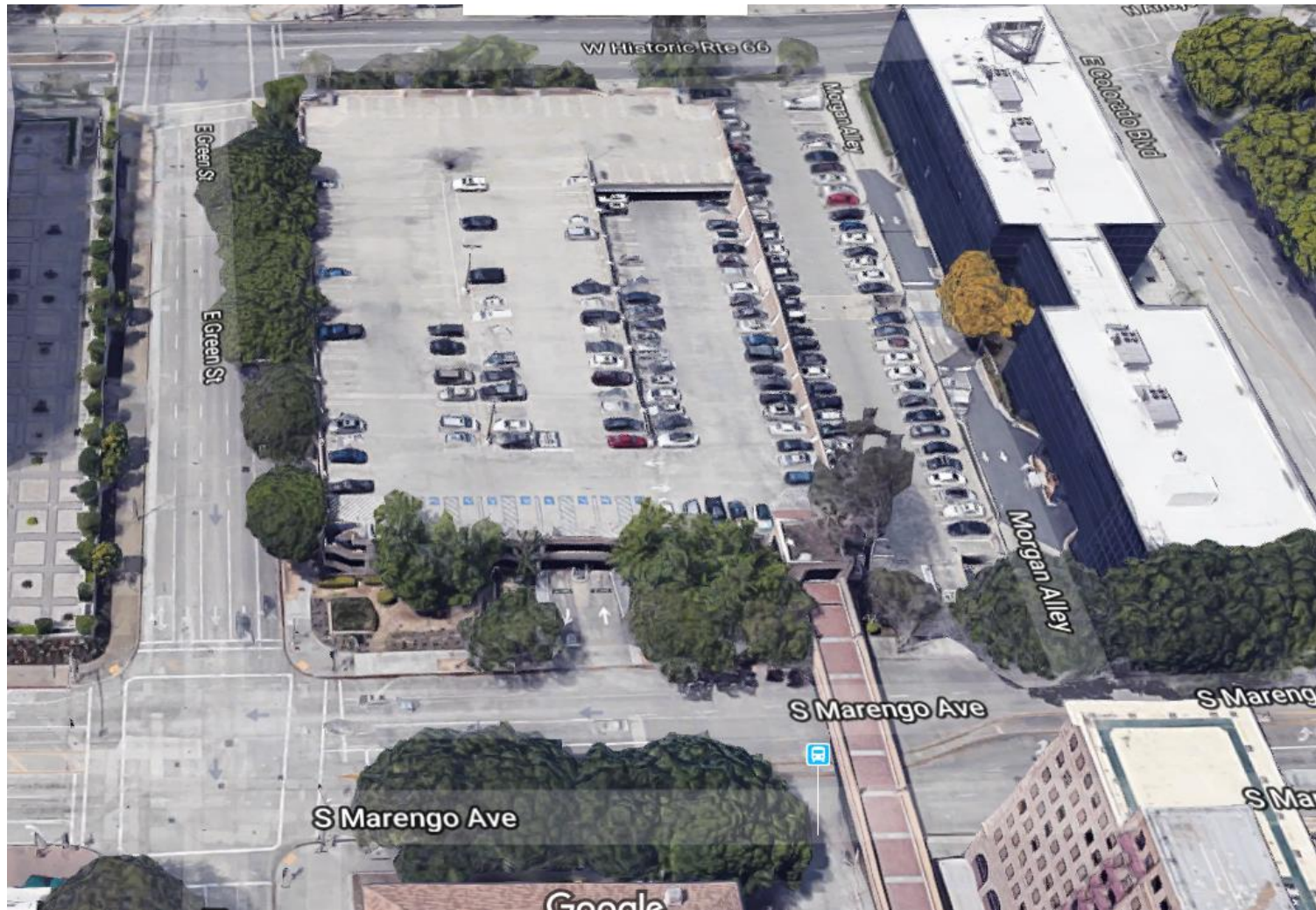




City EV Infrastructure (Projects)

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- Marengo Garage – Fast Charging Plaza

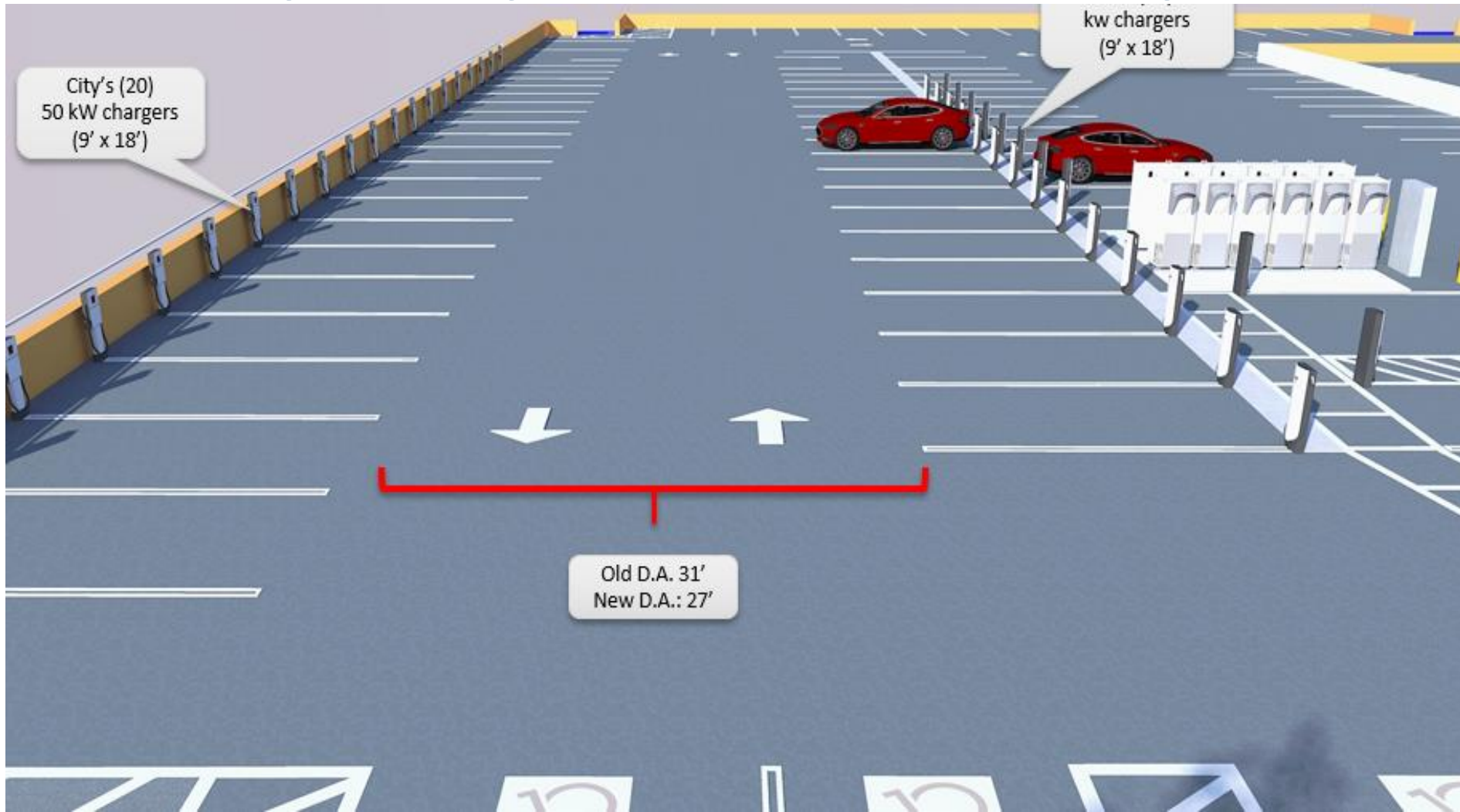




City EV Infrastructure (Projects)

Pasadena Water and Power

- Marengo Garage – 44 DCFC – US Largest

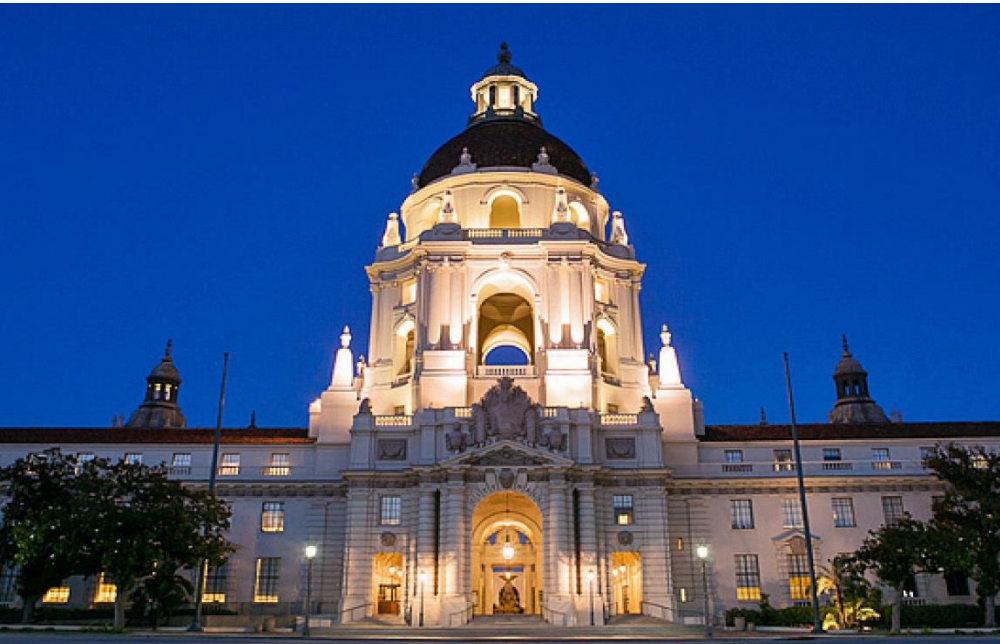




#7: Streamline Permitting

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- All Hands Meeting Pre-Meeting
- Facilitate Permits w/ Building & Safety
- Utility Electric Service Planning Facilitation



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Service Planning Tips

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- Plan for growth. (5 buses/shuttles turn into 50).
- Install physical electrical switchgear and substructures/conduit for the larger system.
- Utilities Installation Options: Install smaller transformers and upgrade later...or install the larger service and pay the difference.





#8: Rates Compete w/ Petroleum

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- EV Rates Confusing
- (Tiered, Demand Charges, Time-of-Use).
- Slow initial usage.
- Usage not traditional pattern (i.e. Buildings)
- Rates cannot cross-subsidize customer classes
- Rate must reflect cost of service
- TIP: Match Charging to Utility TOU Rates



Solution: Collaboration. Experimental Rates
Participation w/ Regional Transit Meetings

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#9: Partner with Others

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Partner:

- PWP, Pasadena DOT & Tesla Building US Largest Public Fast Charging Plaza.
- Layer Funding Opportunities
- Partner with those that have other strengths.



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#10: Innovate

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Innovate:

- Possible Joint-Agency Transit Charging Plaza
- New Rates (Needs collaboration)
- Different Business Models: i.e.. Charging as a service, Shared Mobility Hubs



THINK
BIG

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In the not too distant future...



Questions

