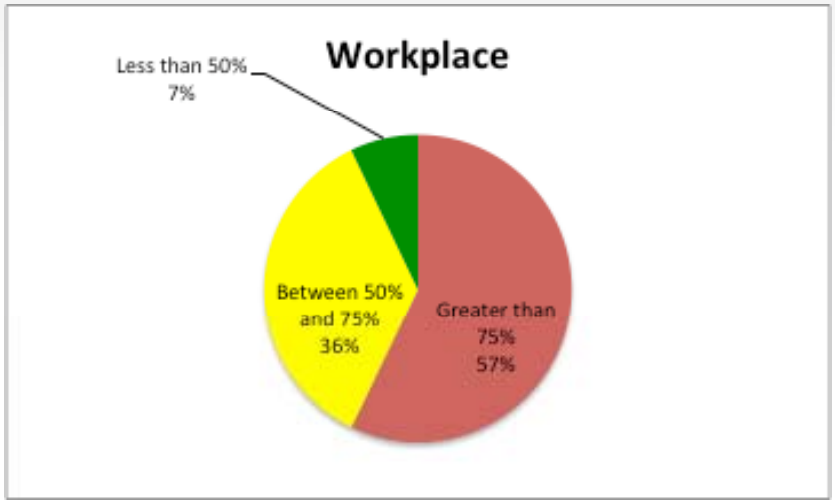
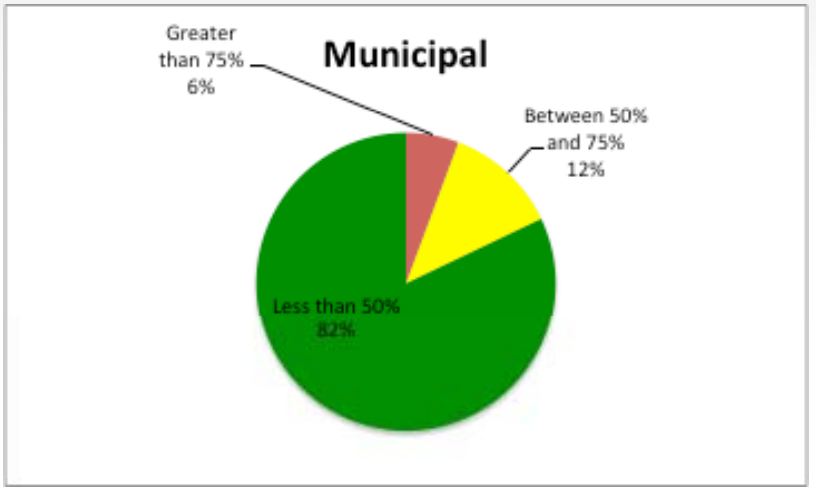
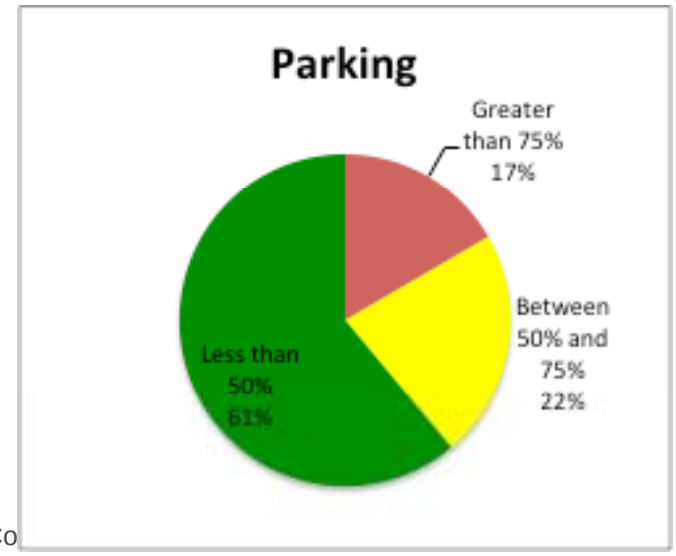
Charging Trends

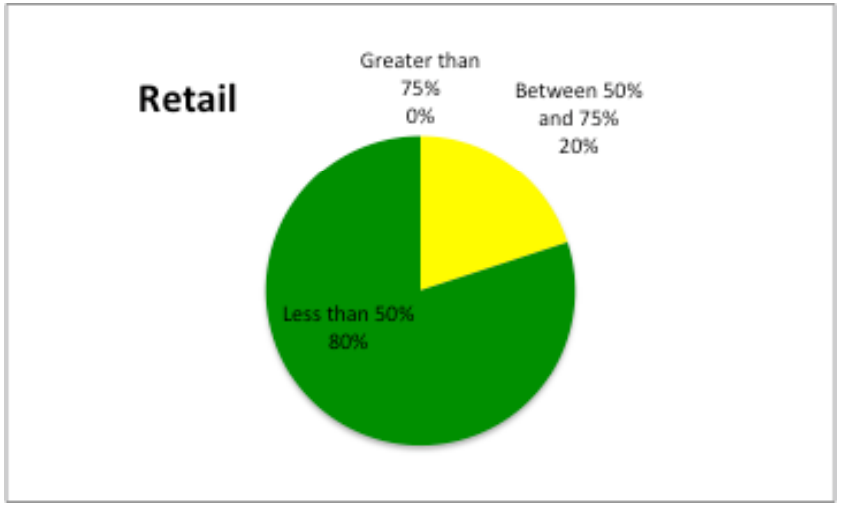
May, 2014

Workplace Stations are Busy



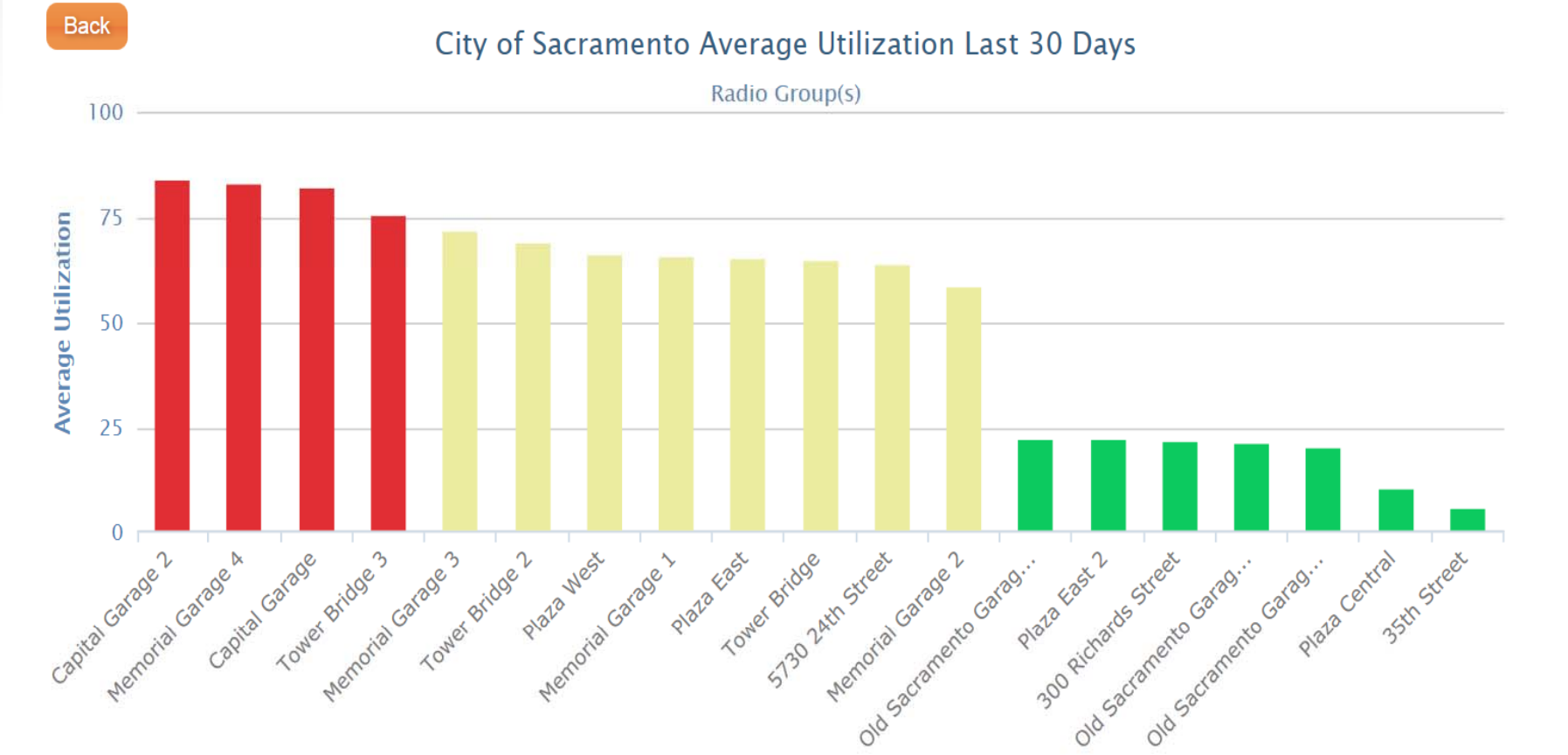






We need to relieve the hot spots

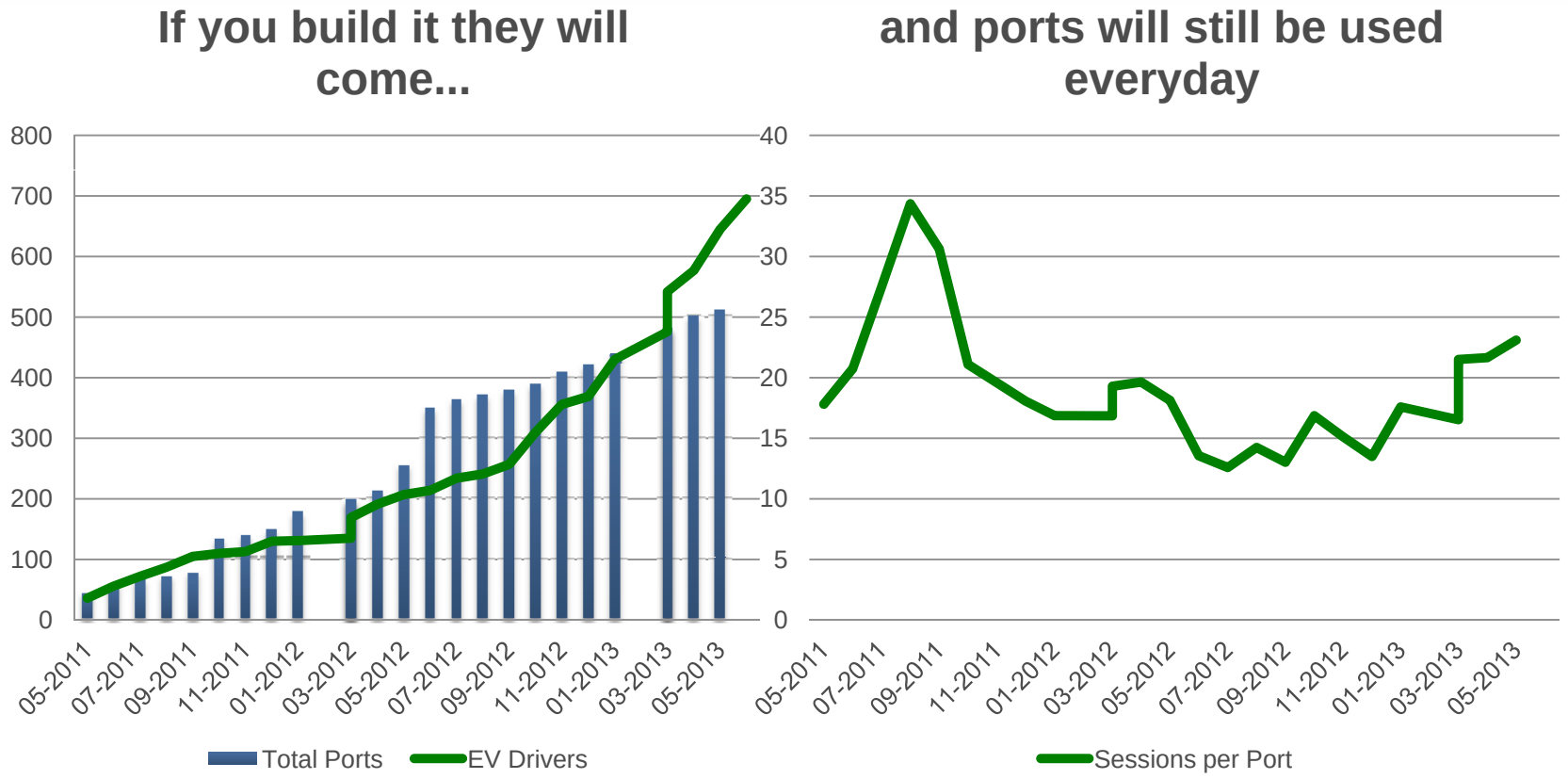
Profile of Station Utilization – Location Matters!



- *Utilization characteristics of our leading customers are indicative of future potential*
- *Location drives utilization! Poorly located ports distort utilization trends.*

Case Study: Major CA Workplace Customer

+ ***Infrastructure investment stimulates EV adoption!***



Quantifying California's EV Infrastructure "Gap"

Attach Rate: Relationship between EVs & public EV ports—defined as # of "public" EV ports deployed per EV sold ("public" defined as non-single family residential)

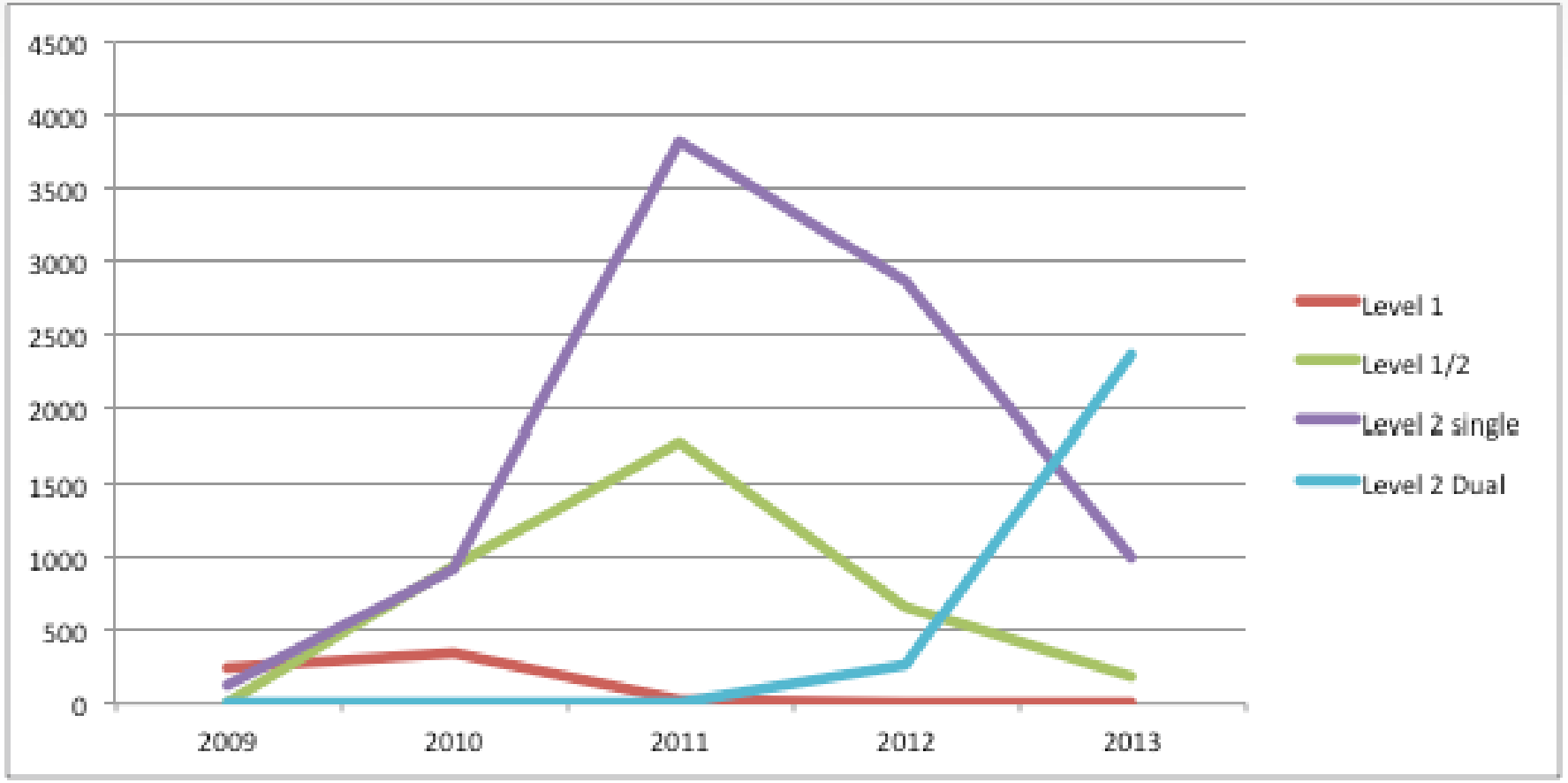
- **50% Attach Rate**: Short-term "target" rate to support rapid pace of EVs sold in next 5-10 years
- **15% Attach Rate**: Historical relationship observed in ChargePoint's charging port portfolio, which has already generated complaints from EV customers regarding lack of public EV infrastructure
- **5% Attach Rate**: Unsustainable public EV infrastructure platform and will retard new EV adoption

Projected EV/PHEV New Car Sales Projected Growth (Cumulative Sales)

	2012 Registered EV Cars	2012 Public EV Charging Ports (# of Ports)	2015 Projected Cumulative EV Cars (Est # of cars)	Required 2015 Public EV Charging Ports(50% Attach)	2020 Projected Cumulative EV Cars (Est # of cars)	Required 2020 Public EV Charging Ports (50% Attach)
CA	29,640	**4,348**	90,625	**45,312**	442,895	**221,448**
US Total	76,133	**17,203**	391,672	**195,836**	2,006,143	**1,003,072**

Based on conservative Pike Research projections for EVs sold,
California needs approximately $1 billion in "public" charging ports by 2020!

Level 1 no Longer Sells



Setting a price on charging increases utilization

- Average stay at our 17,000 stations is 6 hours
- Average stay for a pay for use station is 3.2 hours
- Average stay for a pay by time station is 2.5 hours
- Want more station availability? – charge for its use

Optimizing Infrastructure

These are all estimates

Plan→	Single Port L2 with point-to-point conduit	Dual Port L2 with point-to-point conduit	Dual Port L2 in a 3-station cluster	Dual Port L2 cluster charging $1 an hour	L1 in 6 station cluster
Infrastructure costs per car served	$13,000	$8,000	$5,333	$1,800 (3 per day on each clustered port)	$2,800
Monthly revenue **to** host for 6 port cluster				$1000 (8 hours of billing per day per port, 21 days per month)	
Happy Drivers	yes	yes	yes	Yes: they have to pay but there's a lot more infrastructure	No: slow and using travel cords
Opportunity to take advantage of low cost energy	yes	yes	yes	Yes, could save $500 a month (20 cents per kwh)	No
Energy delivered per day per driver	7 kwh	7 kwh	7 kwh	7 kwh	7 kwh

Recommendations

- Fund expansion of busy station locations
- Have utilities rate base make readies
- Use LCFS money to either make charging free or remove demand charges – too much overhead otherwise
- Make free charging periods of the day