SACRAMENTO COUNTY

FLEET SERVICES DIVISION

Ronald Wirth

Fleet Advance Planning and Sustainability Manager
County of Sacramento, Fleet Services Division

SACRAMENTO COUNTY

Advanced Fleet Strategies

SACRAMENTO COUNTY

FLEET SERVICES DIVISION OVERVIEW

- Area of Operation – 994 square miles
- Population of over 1.6 million
- Who We Serve –
  - Sacramento County Residents, Visitors, Businesses
  - 24 Separate County Departments including –
  - Sheriff's Department
  - Coroner
  - District Attorney
  - Animal Control and Regulation
  - Department of Transportation
  - Department of Water Resources
  - Department of Child, Family and Adult Services
  - Department of Waste Management and Recycling
  - Office of Emergency Services

SACRAMENTO COUNTY

SACRAMENTO DELTA

SACRAMENTO COUNTY

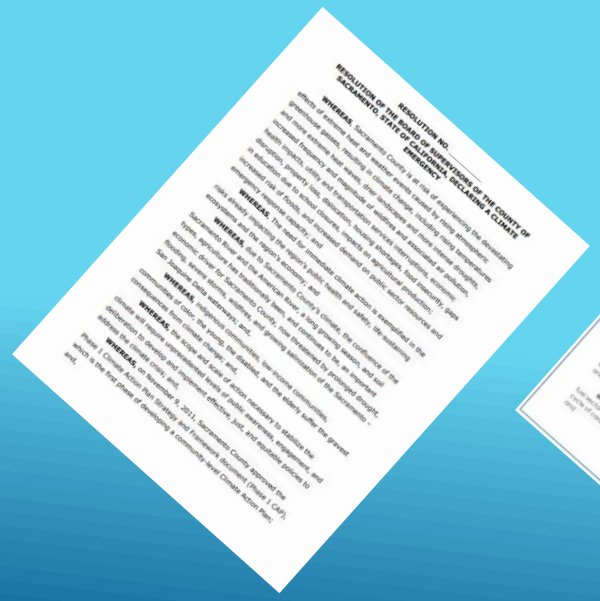
FLEET SERVICES STATISTICS

- Over 2,800 fleet units, 73% Light, 22% Medium and Heavy, 5% Off Road
- Approximately 460 Department Owned vehicles maintained by Fleet Services
- Annual Fuel Usage – over 3.4M Gallons (all fuels)
- Over 21 million miles traveled (VMT) in 2025
- 7 Maintenance Facilities
- 97 Total Fleet Employees
- 73 Technicians
- ASE Blue Seal Certified
- Fleet Services Division Chief
- Light Equipment Fleet Manager
- Heavy Equipment Fleet Manager
- Fleet Advance Planning and Sustainability Manager
- Specifications and Procurement Supervisor

SACRAMENTO COUNTY

COUNTY INITIATIVES AND REGULATORY COMPLIANCE

- 2011 - Board of Supervisors adopted the Sacramento County Climate Action Plan (CAP) Strategy and Framework Document (Phase 1) to meet GHG reductions required by California's Global Warming Solutions Act of 2006
- 2020 – County Board of Supervisors Climate Emergency Declaration
- 2020 – Executive Order N-79-20 signed by Governor Newsom
- 2022 – County Climate Action Plan Phase 2B
- 2024 – California Air Resources Board – Advanced Clean Fleets Regulation



CALIFORNIA AIR RESOURCES BOARD

SACRAMENTO COUNTY

EVERY FLEET IS UNIQUE !

- There is no "One Size Fits All" solution.
- Assess Your Fleet - Size, Make Up, Geography, Climate, Parking Locations, Operational Challenges and Unique Operations
- Talk to your vehicle / equipment operators. Review equipment needs with them. Visit job sites.

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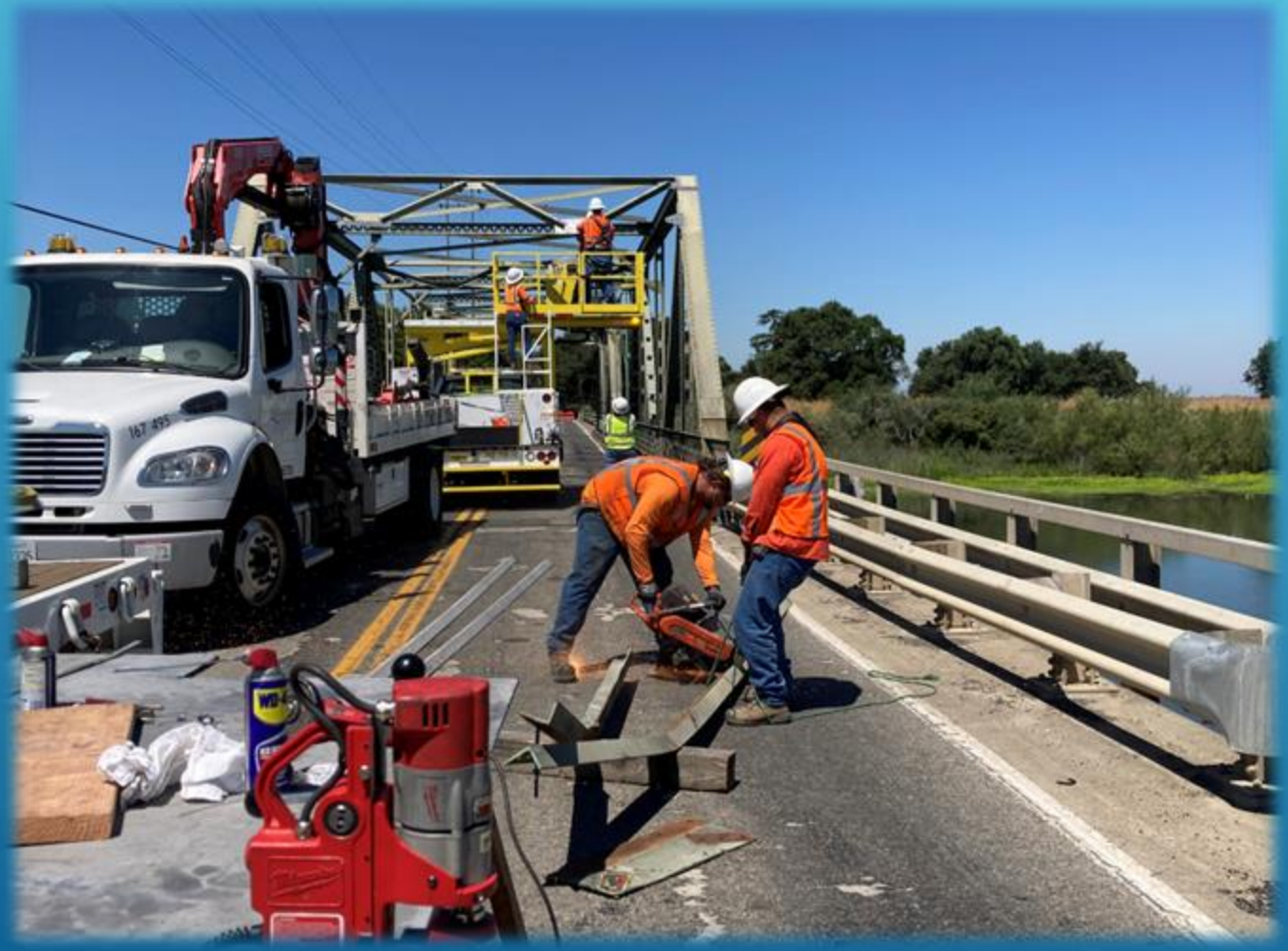
COUNTY CREWS AND EQUIPMENT IN ACTION



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WHY ELECTRIFY YOUR FLEET?

- Organization / Executive Directive
- Climate Action Plan Initiatives
- Regulations
- Greenhouse Gas Reduction
- Reduce Fossil Fuel Consumption
- Reduce Maintenance Costs
- Marketing

The individual reasons you have chosen to electrify will drive the strategy and timeline of your overall electrification plan.

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STRATEGY

- **Light Fleet -**
  - Passenger Cars
  - Pickups and Utility Trucks
  - Offsets Purchases for Heavy Fleet (CARB-ACF – California) – Vehicle Class Changes
- **Heavy Fleet -**
  - CARB –ACF Compliance - Scheduled Purchases vs Milestone can heavily influence timelines
  - CARB Exemptions vs Internal Policies and Sustainability Goals
  - Contingency Plans – What do you do if there is no exemption, but also not suitable ZEV option?
- **Considerations –**
  - Telematics – A must for informed, data driven decisions!
  - Utilization – Right Size the Fleet. Downsizing (where appropriate) can help free up capital for ZEV purchases.
  - Capital Cost Management and Budget – Long Term Forecasting.
  - Do vehicle lifecycles and replacement policy align with your electrification strategy?
  - Capital, Grants, Incentives for Charging Infrastructure – Who bears the cost of infrastructure?
  - Property – Owned or Leased?
  - Will your electrical utility be able to deliver capacity on your timeline?
  - Contingency Plan for Interim Charging?
  - Outside Consulting?

SACRAMENTO COUNTY

EV / ICE PURCHASE TRACKING FOR CARB -ACF

I.C.E. VEHICLE PURCHASES WITH EV OFFSET - Includes BOTH Light and Heavy Equipment

FY	UNIT	Department	DESCRIPTION	VIN	OWNER	PO DATE	INSERVICE DATE	ICE	Department	PO DATE	COMMENTS
2024	152-408	D TECH	E Transit	1FTBW1YK6PKB64225	Fleet Services	9/11/2023	2/27/2024	170-346	Drainage	2/14/2024	Water Resources Dump Truck
2024	152-407	DGS Fac.	E Transit	1FTBW1YK0PKB64186	Fleet Services	9/11/2023	2/7/2024	170-347	Drainage	2/14/2024	Water Resources Dump Truck
2024	152-406	DGS Fac.	E Transit	1FTBW1YK8PKB65165	Fleet Services	9/11/2023	2/7/2024	170-348	Drainage	2/14/2024	Water Resources Dump Truck
2024	152-401	DGS Mail	E Transit	1FTBW1YK0PKB64995	Fleet Services	9/11/2023	2/7/2024	941-189	Fleet	8/26/2024	Fleet Services Heavy Haul - with Cozad Ramps and PTO
2024	152-400	DHA	E Transit	1FTBW1YMXRKB82120	Fleet Services	3/19/2024	1/29/2025	160-499	Drainage	1/30/2024	Water Resources 33,000 GVWR Service with Crane and VanAir
2024	152-402	DHA	E Transit	1FTBW1YM4RKB82162	Fleet Services	3/19/2024	4/21/2025	160-500	Drainage	1/30/2024	Water Resources 33,000 GVWR Flat / Stake with Crane.
2024	152-404	DHA	E Transit	1FTBW1YM3RKB82069	Fleet Services	3/19/2024	5/13/2025	141-500	Animal Ctrl.	2/25/2025	Animal Control with auxiliary AC system
2024	152-405	DGS Fac.	E Transit	1FTBW9CM0RKB82049	Fleet Services	3/29/2024	TBD	141-501	Animal Ctrl.	2/25/2025	Animal Control with auxiliary AC system
2024	153-400	DGS Fac.	E Transit	1FTBW9CMXRKB82205	Fleet Services	3/29/2024	TBD	292-275	DOT Brid.	10/2/2025	DOT 30,000 GVWR Heavy Tool Van w/ welder and water system
2024	153-402	DGS Fac.	E Transit	1FTBW9CM5RKB82063	Fleet Services	3/29/2024	TBD	390-322	DOT Tree	6/13/2025	DOT 33,000 GVWR, 2 axle - 70' Aerial Lift
2025	153-501	DGS Fac.	E-Transit	1FTBW9CMXRKB83371	Fleet Services	9/19/2024	TBD	140-500	Water Res.	8/5/2024	Water Resources F250 4X4 SuperCab - BU2367 - Bumped 177-386 PB Loader
2025	153-502	DOT Signs	E-Transit	1FTBW9CM3RKB83731	Fleet Services	9/19/2024	TBD	142-400	DOT Signs	4/25/2024	DOT Sign / Traffic Control Truck
2025	137-503	DGS Fac.	E-Transit Cab chassis	TBD	Fleet Services	3/18/2025	TBD	135-500	Water Res.	9/10/2024	Water Resources PU F250
2025	131-524	DOT Sup.	Silverado EV	TBD	Fleet Services	6/17/2025	TBD	292-272	DOT	10/2/2025	14' - 30,000 GVWR Heavy Tool Van w/ welder and water system - B. McWhorter
2025	131-525	DOT Sup.	Silverado EV	TBD	Fleet Services	6/17/2025	TBD	292-275	DOT	10/2/2025	18' - 30,000 GVWR Heavy Tool Van w/ welder and water system - B. McWhorter
2026	131-634	DCS/CMID	Silverado EV	TBD	Fleet Services	8/21/2025	TBD	292-273	Water Res.	10/3/2025	16' - 26,000 GVWR Heavy Tool / Service Van
2026	131-635	Fleet Parts	Silverado EV	TBD	Fleet Services	2/2/2026	TBD	**TBD**			
2026	131-614	P&R	Silverado EV	TBD	Fleet Services	8/29/2025	TBD	134-501	P&R	9/15/2025	Lightning and Dump body for Parks - Lighting offsets P&R Dump Truck
2026	131-636	WR	Silverado EV	TBD	Fleet Services	8/29/2025	TBD	292-274	Water Res.	10/3/2025	16' - 26,000 GVWR Heavy Tool / Service Van
2026	131-637	WR	Silverado EV	TBD	Fleet Services	8/29/2025	TBD	292-276	Water Res.	10/3/2025	16' - 26,000 GVWR Heavy Tool / Service Van
2026	131-640	DOT	Silverado EV	TBD	Fleet Services	10/10/2025	TBD	177-386	DOT	Pending	33,000 GVWR - 16 cu/yd Rear Loader replacing PB Loader - B McWhorter
2026	131-641	DOT	Silverado EV	TBD	Fleet Services	10/10/2025	TBD	177-387	DOT	Pending	37,600 GVWR PB Loader replacing PB Loader - B McWhorter
2026	131-642	DOT	Silverado EV	TBD	Fleet Services	10/10/2025	TBD	177-388	DOT	10/2/2025	52,200 GVWR - Grapple Loader replacing PB Loader - B McWhorter
2026	131-638	DOT	Silverado EV	TBD	Fleet Services	10/10/2025	TBD	161-526	DOT Signs		26,000 GVWR RPM Truck - cab/chassis for upfit - Jose Corona
2026	131-639	DOT	Silverado EV	TBD	Fleet Services	10/10/2025	TBD	**TBD**			Jose Corona
2025	131-515	DOT Signs	Lightning Flash	TBD	Fleet Services	11/6/2025		134-503	DOT Signs		Phil Robinson - These (3) Lightnings to offset (3) I.C.E. sign trucks
2025	131-516	DOT Signs	Lightning Flash	TBD	Fleet Services	11/6/2025		134-509	DOT Signs		Phil Robinson - These (3) Lightnings to offset (3) I.C.E. sign trucks
2025	131-517	DOT Signs	Lightning Flash	TBD	Fleet Services	11/6/2025		134-510	DOT Signs		Phil Robinson - These (3) Lightnings to offset (3) I.C.E. sign trucks
								162-003	DOT Pave.		Crack seal - One May offset other "162"
								162-004	DOT Pave.		Crack seal - One May offset other "162"
								134-704			Tall Service Truck - Water Resources
								134-706			Tall Service Truck - Water Resources
								134-502	WR		Flat bed with tank - Possible offset with Rizon w/ Wachs
								134-505	DOT Signs		Sign truck - Pending - Phil's Sign Lightning
								134-507	DOT Signs		Sign truck - Pending - Phil's Sign Lightning
								134-508	DOT Signs		Sign truck

NEW - With pending purchases | Sheet1 | Over 8,500 Exemptions | OLD RECORD 3-26

Ford
ENR6518

COCO RO

COCO RO

MAXIMIZE THE BENEFITS OF YOUR DATA

- **The Basics –** Safety, PM Currency, PM Quality, Utilization, Unit Availability, Breakdown Rate, Technician Productivity and Efficiency, Accurate Data and Reporting.
- **Transportation Policy and Collective Bargaining -**

  Are your policies and agreements up to date?

  Transportation, Authorized Use, Telematics, Utilization, Procurement, Lifecycles,

  Home Retention, Right Sizing
- **KPI and Benchmarking –** You cannot improve what you cannot measure!
- **Customer Communication and Surveys –**

  Are your priorities aligned with those of your customers?
- **Asset Management –** Vehicle / Equipment Replacement Forecasting

  Don't wait for the perfect solution while operating inefficient / costly vehicles.
- **Collaboration and Communication –** City Council, Board of Supervisors, Facilities Management, Real Estate Management, Budget / Accounting, Purchasing, Power Utility
- **Understand your organization's Environmental / Sustainability Policies and Goals**

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GPS / TELEMATICS BENEFITS

- GPS / Telematics is the most efficient method to achieve data collection and reporting.
- Regulatory Compliance - Smog checks without removing vehicles from service.
- Clean Truck Check Program – Must use approved GPS provider. ECM and GPS cannot be disabled anytime during test period.
- Advanced Clean Fleet – Exemption approval will require detailed daily data using telematics.
- Emissions testing requirements for off-road equipment are expected from CARB soon.
- Additional Benefits:

  Safety – Speed Monitoring, Seat Belt Notification, Driver Behavior.

  Vehicle Data in Real time – Utilization Data, Odometer Readings, Engine Hour Readings,

  Emission Fault Notifications, Diagnostics Trouble Codes.

  Efficiency – Smog Checks, Automatic Work Requests, avoids breakdowns and reduces down time.

  Asset Management – Lifecycle Forecasting

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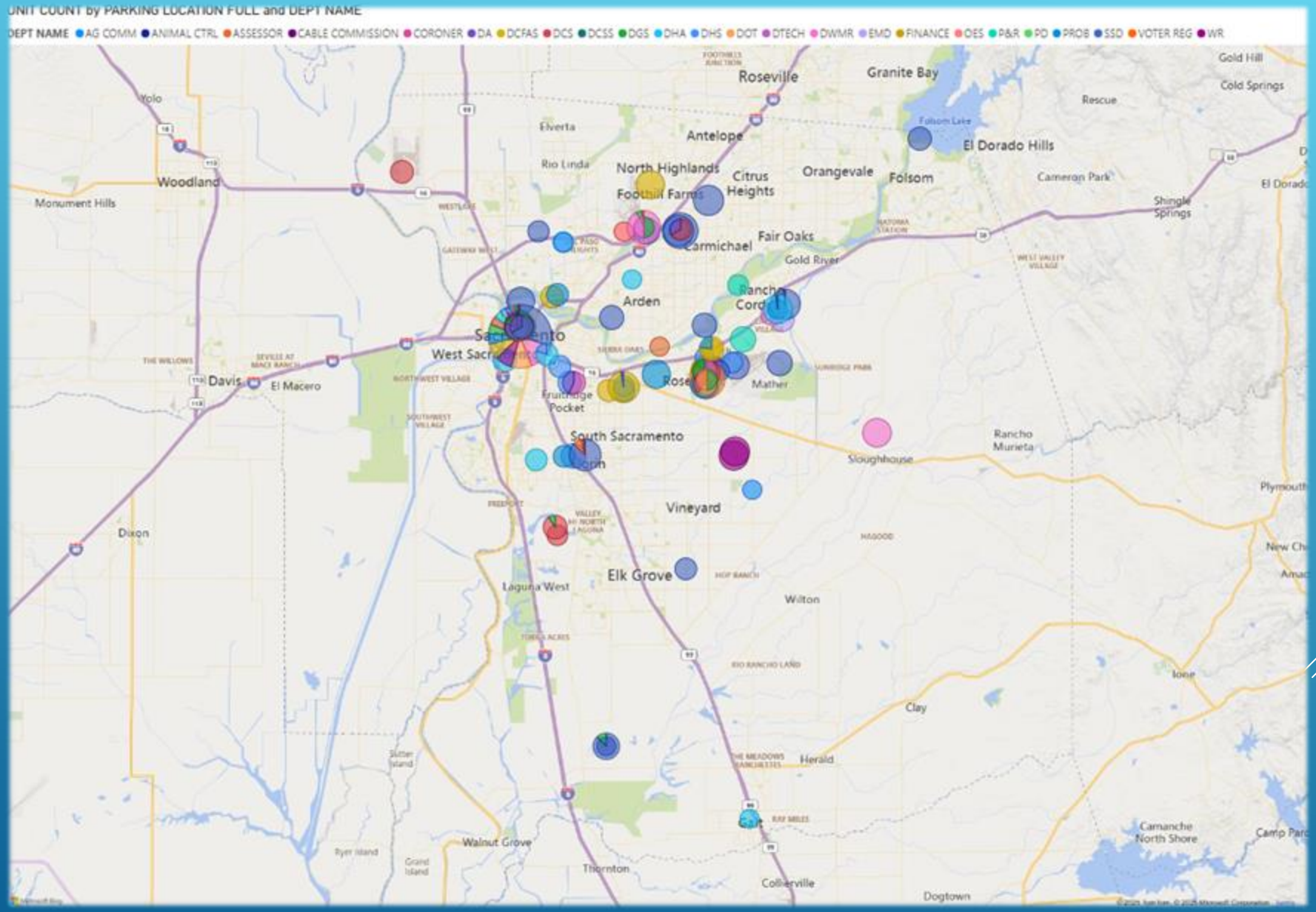
IMPLEMENTATION OF GPS / TELEMATICS IN MUNICIPAL FLEETS

- Conduct Pilots to identify the system and supplier that works best for your application.
- Identify Approval Levels - City Council, Board of Supervisors, Director
- Transportation Policy
- Bargaining Unit Notification / Meetings
- Consult Purchasing – Identify Means to Purchase. State Contract, Co-Op Contract, Internal RFP. **Include installation and extended subscription period.**
- Verify IT Systems and Fleet Management Information System (FMIS) Compatibility.
- Set benchmarks for the parameters that are most valuable to your fleet. Safety, Fuel Consumption, Unauthorized Use, Routing, etc.

SACRAMENTO COUNTY

PARKING LOCATION MAP

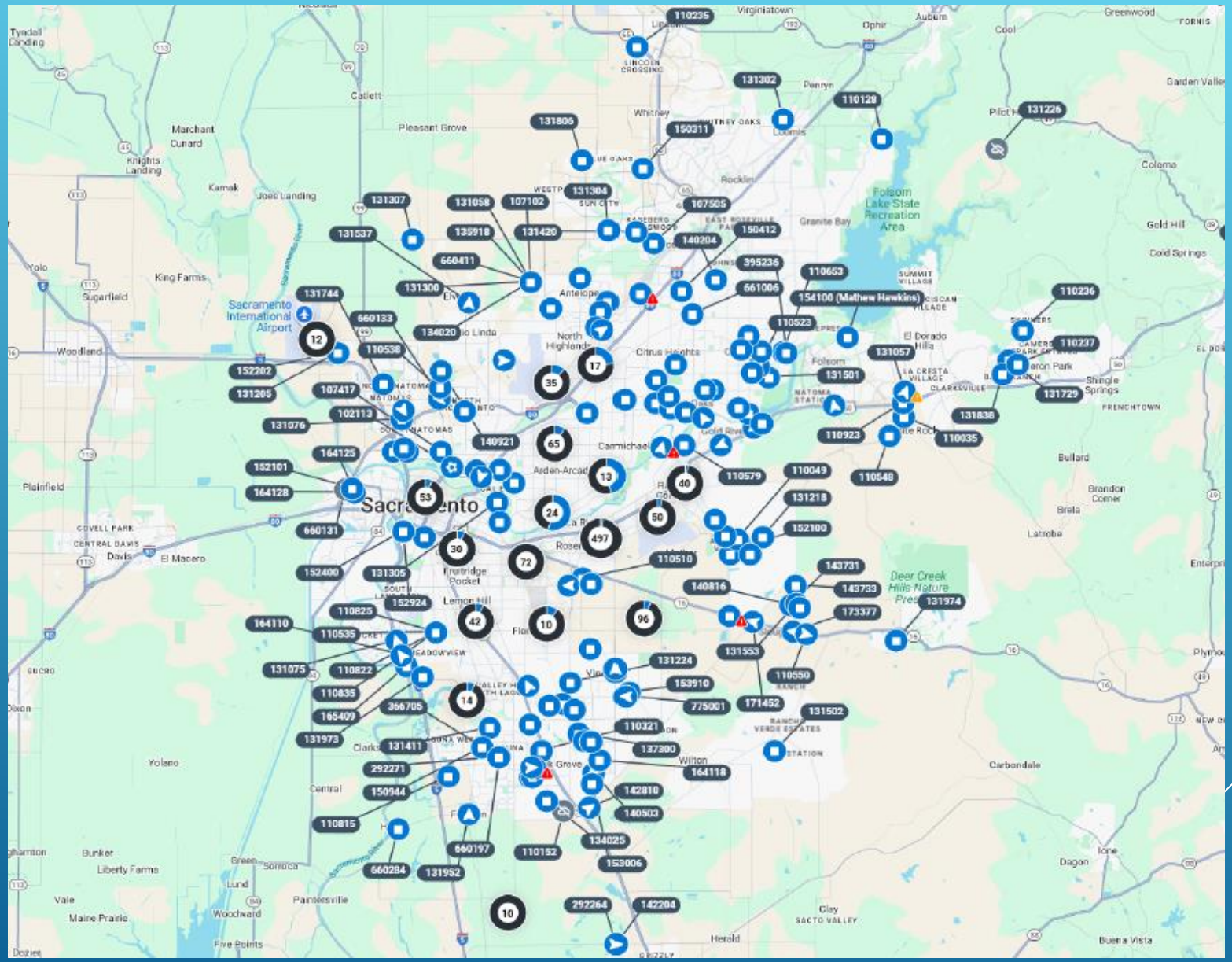


COUNTY FLEET EV CHARGING

EV CHARGING INFRASTRUCTURE PLANNING

- Site Assessment from Electrical Utility –
  - How much electrical capacity is available?
  - Timeline for additional capacity?
- Outside Consulting – Long Term Planning
- Project Approval –
  - Feasibility Study
  - Electrical / Architectural Project Plans and Cost Estimating
  - Use of Grants / Incentives? – Conditions and Future Reporting
  - Partner with Utility Provider?
  - Select a Charging Provider – System Compatibility, Ability to Support Fleets
  - Budget and Final Approval
  - Commissioning / Inspections
- Final Site Planning and Permits
- Employee Charging, Public Charging, Fleet Charging
- Charger Maintenance and Repairs
- EV Charging Policy
- Policy Enforcement

CURRENT LOCATION MAP



TRIP DATA ANALYSIS

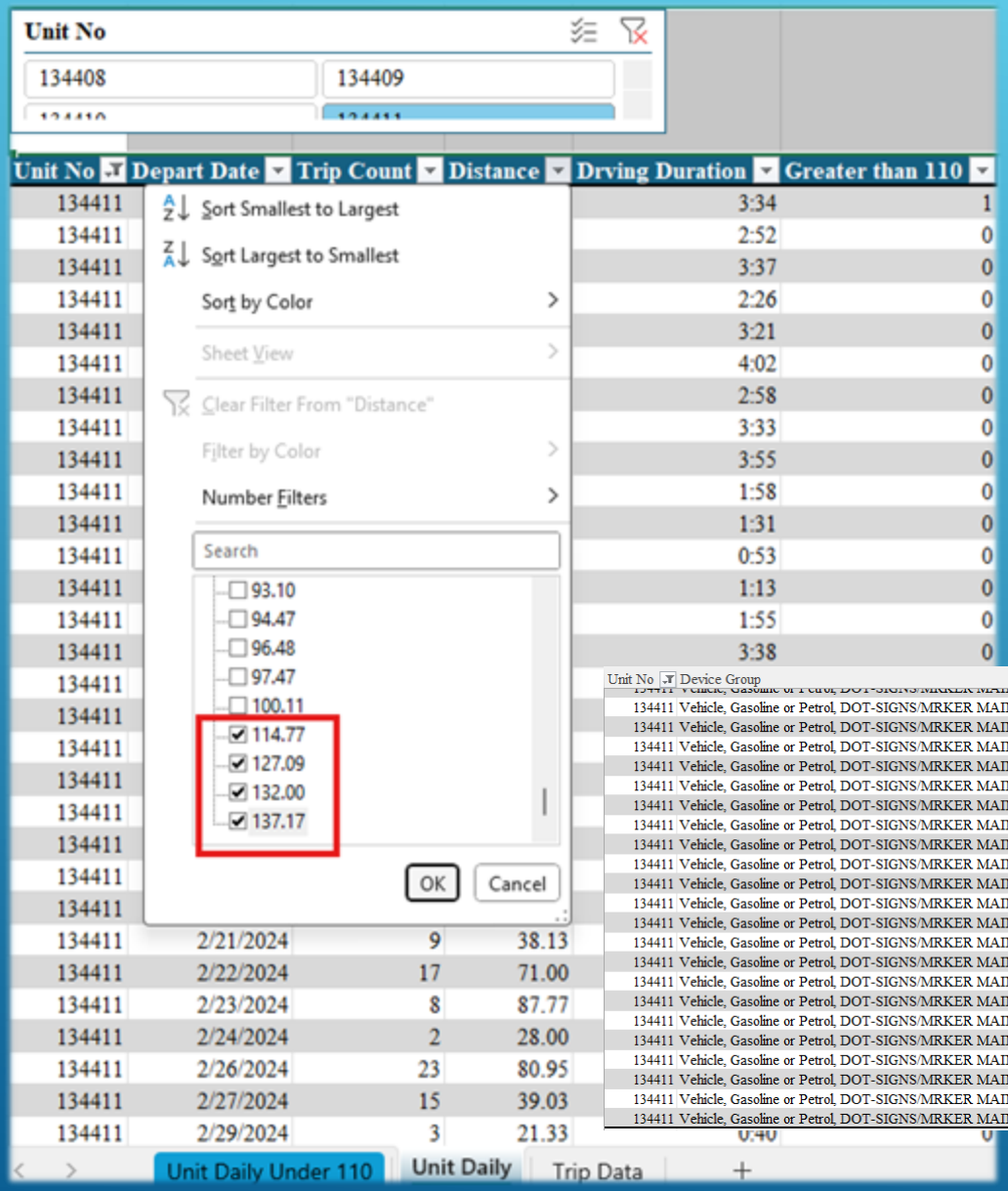
- Telematics data using simple export to Excel
- Average daily and maximum daily distances for one year.
- Eliminates perceptions about daily miles driven.
- Customize to distinct groups of vehicles where EV replacements are proposed.
- Set Report Parameters to match the expected range of the proposed electric vehicle.
- Expected range should account for varying conditions and battery degradation over time.
- Identifies parking locations and dwell times to plan for charging.

TRIP SUMMARY DATA

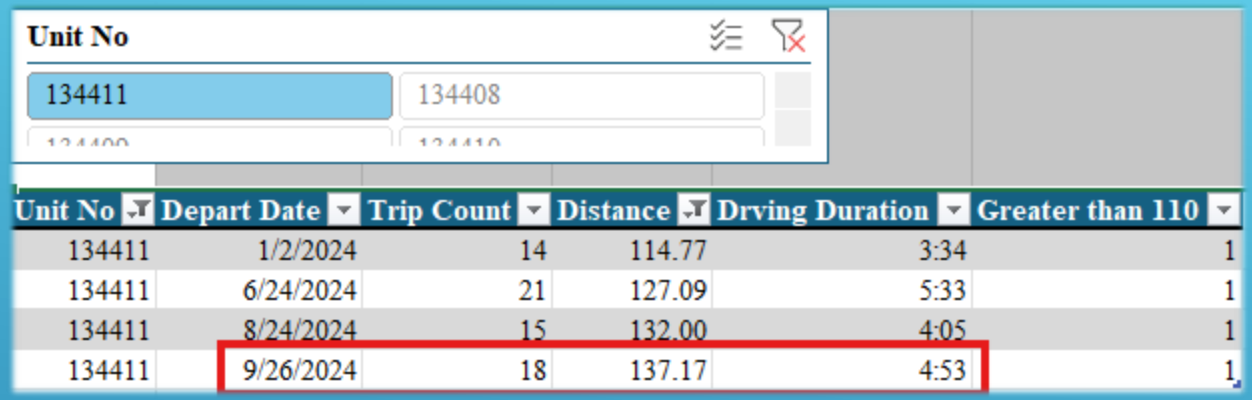
Unit No	Days	Greater than 110	Max Daily Dist.	Avg Daily Dist.	% Under 110 miles
134408	69	3	127.31	51.63	96%
134409	91	8	150.30	54.47	91%
134410	106	5	135.08	60.00	95%
134411	86	4	137.17	46.90	95%
134412	105	3	122.72	41.32	97%
134413	58	2	143.07	55.25	97%
134414	143	6	151.62	49.41	96%
134415	102	7	143.48	47.80	93%
134416	164	9	184.15	54.75	95%
134417	152	19	208.92	58.94	88%

Unit Daily Under 110 | Unit Daily | Trip Data

TRIP DATA ANALYSIS



Unit No	Depart Date	Trip Count	Distance	Drving Duration	Greater than 110
134411				3:34	1
134411				2:52	0
134411				3:37	0
134411				2:26	0
134411				3:21	0
134411				4:02	0
134411				2:58	0
134411				3:33	0
134411				3:55	0
134411				1:58	0
134411				1:31	0
134411				0:53	0
134411				1:13	0
134411				1:55	0
134411				3:38	0
134411					
134411					
134411					
134411					
134411					
134411					
134411					
134411					
134411					
134411	2/21/2024	9	38.13		
134411	2/22/2024	17	71.00		
134411	2/23/2024	8	87.77		
134411	2/24/2024	2	28.00		
134411	2/26/2024	23	80.95		
134411	2/27/2024	15	39.03		
134411	2/29/2024	3	21.33		



Unit No	Depart Date	Trip Count	Distance	Drving Duration	Greater than 110
134411	1/2/2024	14	114.77	3:34	1
134411	6/24/2024	21	127.09	5:33	1
134411	8/24/2024	15	132.00	4:05	1
134411	9/26/2024	18	137.17	4:53	1

Unit No	Device Group	Depart Date Time	Start Date	Start During Work Hours	Driving Duration	Stop Date	Stop During Work Hours	Distance	Stop Duration	Location
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/24/2024 13:12	9/24/2024 13:12	TRUE	0.00087963	9/24/2024 13:13	TRUE	0.153855994	0.044849537	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/24/2024 14:17	9/24/2024 14:17	FALSE	0.000717593	9/24/2024 14:18	FALSE	0.003424877	0.009085648	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/24/2024 14:32	9/24/2024 14:32	FALSE	0.010798611	9/24/2024 14:47	FALSE	8.017711639	0.002165081	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/24/2024 14:50	9/24/2024 14:50	FALSE	0.003483067	9/24/2024 14:55	FALSE	0.449492663	1.690393519	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/26/2024 7:29	9/26/2024 7:29	TRUE	0.002303241	9/26/2024 7:33	TRUE	0.033159219	0.004201389	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/26/2024 7:39	9/26/2024 7:39	TRUE	0.011597222	9/26/2024 7:55	TRUE	3.612926245	0.0034375	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/26/2024 8:00	9/26/2024 8:00	TRUE	0.000914352	9/26/2024 8:02	TRUE	0.044451039	0.005729167	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/26/2024 8:10	9/26/2024 8:10	TRUE	0.009351852	9/26/2024 8:23	TRUE	3.655687332	0.008043981	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/26/2024 8:35	9/26/2024 8:35	TRUE	0.004594907	9/26/2024 8:42	TRUE	2.406426907	0.003148148	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/26/2024 8:46	9/26/2024 8:46	TRUE	0.001168981	9/26/2024 8:48	TRUE	0.434083194	0.003090278	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/26/2024 8:52	9/26/2024 8:52	TRUE	0.031134259	9/26/2024 9:37	TRUE	27.51082611	0.006863426	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/26/2024 9:47	9/26/2024 9:47	TRUE	0.004270833	9/26/2024 9:53	TRUE	0.808551133	0.002268519	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/26/2024 9:56	9/26/2024 9:56	TRUE	0.00130787	9/26/2024 9:58	TRUE	0.528350651	0.003923611	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/26/2024 10:04	9/26/2024 10:04	TRUE	0.001990741	9/26/2024 10:07	TRUE	0.497991145	0.005277778	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/26/2024 10:14	9/26/2024 10:14	TRUE	0.046134259	9/26/2024 11:21	TRUE	38.82393265	0.007476852	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/26/2024 11:32	9/26/2024 11:32	TRUE	0.009247685	9/26/2024 11:45	TRUE	5.200085163	0.004710648	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/26/2024 11:52	9/26/2024 11:52	TRUE	0.005324074	9/26/2024 11:59	TRUE	1.539625883	0.01380787	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/26/2024 12:19	9/26/2024 12:19	TRUE	0.023483796	9/26/2024 12:53	TRUE	19.03740883	0.014074074	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/26/2024 13:13	9/26/2024 13:13	TRUE	0.00162037	9/26/2024 13:16	TRUE	0.060234021	0.014872685	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/26/2024 13:37	9/26/2024 13:37	TRUE	0.033900463	9/26/2024 14:26	FALSE	28.12590408	0.00468897	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/26/2024 14:33	9/26/2024 14:33	FALSE	0.013956863	9/26/2024 14:53	FALSE	4.512207031	0.003519988	
134411	Vehicle, Gasoline or Petrol, DOT-SIGNS/MRKER MAINT 2962616100, BU2755, MEDIUM D	9/26/2024 14:58	9/26/2024 14:58	FALSE	0.001572604	9/26/2024 15:00	FALSE	0.338047415	3.743859282	

ANNUAL VEHICLE MILES TRAVELED BY VEHICLE CLASS

2025 VMT

CLASS 3	HEAVY	LIGHT	Total
ON ROAD UNIT	4,303,475	19,413,460	**23,716,935**
Total	**4,303,475**	**19,413,460**	**23,716,935**

2025 VMT

STATUS DESC	HEAVY	LIGHT	Total
Active unit	3,753,646	15,886,060	**19,639,706**
Deactivated unit	0	714,252	**714,252**
Flagged for disposal	475,845	2,501,827	**2,977,672**
Prep unit for sale	56,171	50,392	**106,563**
Ready for sale		0	**0**
Temporary Active		109,758	**109,758**
Unit has been scrapped	0	0	**0**
Total	**4,303,475**	**19,413,460**	**23,716,935**

2025 VMT

CLASS TYPE	HEAVY	LIGHT	Total
Automobile	30,133	5,978,843	**6,008,976**
Buses, Highway and Metro Transport	126,495		**126,495**
Buses, School Transportation	19,842		**19,842**
Excavating, Grading, Compacting, Paving and Loading Equip.	165		**165**
Motorcycles, Scooters and ATV		36,450	**36,450**
Physical Plant	2		**2**
Pick Up Trucks	57,659	11,156,667	**11,214,326**
Trailers	817,824	0	**817,824**
Trucks, Excavation	127,927		**127,927**
Trucks, General Purpose	1,175,592		**1,175,592**
Trucks, Pavement Maintenance	116,182		**116,182**
Trucks, Refuse Compacting	1,475,936		**1,475,936**
Trucks, Special Mobile Services	199,547		**199,547**
Total	**4,303,475**	**19,413,460**	**23,716,935**

2025 METER DETAIL

UNIT_NO	METER_DATE	METER
122004	1/1/2025 12:04:01 AM	92,608
107205	1/1/2025 12:07:34 AM	75,461
122731	1/1/2025 12:08:08 AM	115,501
110087	1/1/2025 12:16:57 AM	48,397
110087	1/1/2025 12:37:06 AM	48,398
110208	1/1/2025 12:47:01 AM	27,734
110087	1/1/2025 12:57:13 AM	48,399
110208	1/1/2025 1:07:09 AM	27,735
110087	1/1/2025 1:27:29 AM	48,400
110208	1/1/2025 1:28:13 AM	27,736
110087	1/1/2025 1:37:30 AM	48,401
110208	1/1/2025 1:57:30 AM	27,737
141801	1/1/2025 2:18:08 AM	66,678
141801	1/1/2025 2:28:08 AM	66,682

Filters

Search

Filters on this page

CLASS 3
is ON ROAD UNIT

CLASS TYPE
is (All)

DEPT_NAME
is not SAFCA, SASD, SRWTP, or AIRPORT

UNIT DETAIL

STATUS DESC	UNIT NO	YEAR	MAKE	MODEL	METER	USAGE	IN SERVICE DATE	USAGE DATE CHECK	CLASS TYPE	FUEL TYPE	LIGHT/HEAVY	FLEET TYP
Active unit	101001	2019	BMW	R1250RT-P	35,288	4,120	6/21/2021	1/24/2026	Motorcycles, Scooters and ATV	Gasoline, EVR	LIGHT	FLEET REN
Active unit	101002	2019	BMW	R1250RT-P	29,300	5,787	12/20/2021	1/24/2026	Motorcycles, Scooters and ATV	Gasoline, EVR	LIGHT	FLEET REN
Active unit	101003	2019	BMW	R1250RT-P	35,903	5,117	3/10/2021	1/24/2026	Motorcycles, Scooters and ATV	Gasoline, EVR	LIGHT	FLEET REN
Active unit	101004	2019	BMW	R1250RT-P	41,460	8,111	4/8/2021	1/24/2026	Motorcycles, Scooters and ATV	Gasoline, EVR	LIGHT	FLEET REN
Active unit	101304	2023	BMW	R1250RT	15,650	4,158	8/8/2023	1/24/2026	Motorcycles, Scooters and ATV	Gasoline, EVR	LIGHT	FLEET REN
Active unit	101305	2023	BMW	R1250RT	23,487	5,598	10/13/2023	1/24/2026	Motorcycles, Scooters and ATV	Gasoline, EVR	LIGHT	FLEET REN
Active unit	101306	2023	BMW	R1250RT	37,756	1,792	9/14/2023	1/24/2026	Motorcycles, Scooters and ATV	Gasoline, EVR	LIGHT	FLEET REN
Active unit	101307	2023	BMW	R1250RT	24,711	1,767	10/13/2023	1/24/2026	Motorcycles, Scooters and ATV	Gasoline, EVR	LIGHT	FLEET REN
Temporary Active	101500	2015	BMW	R1200RT-P	69,662	0	7/1/2015	1/24/2026	Motorcycles, Scooters and ATV	Gasoline, EVR	LIGHT	FLEET REN
Temporary Active	101501	2015	BMW	R1200RT-P	86,520	0	7/1/2015	1/24/2026	Motorcycles, Scooters and ATV	Gasoline, EVR	LIGHT	FLEET REN
Flagged for disposal	101503	2015	BMW	R1200RT-P	59,403	0	7/1/2015	1/24/2026	Motorcycles, Scooters and ATV	Gasoline, EVR	LIGHT	FLEET REN
Active unit	102001	2021	TOYOTA	COROLLA	50,128	13,661	8/7/2020	1/24/2026	Automobile	Dual Fuel, Gasoline and Electric	LIGHT	FLEET REN
Active unit	102002	2021	TOYOTA	COROLLA	38,178	7,575	8/7/2020	1/24/2026	Automobile	Dual Fuel, Gasoline and Electric	LIGHT	FLEET REN
Active unit	102003	2021	TOYOTA	COROLLA	21,606	6,764	8/18/2020	1/24/2026	Automobile	Dual Fuel, Gasoline and Electric	LIGHT	FLEET REN
Active unit	102004	2021	TOYOTA	COROLLA	17,560	1,753	8/10/2020	1/24/2026	Automobile	Dual Fuel, Gasoline and Electric	LIGHT	FLEET REN

USAGE DATE CHECK IS USED TO CHECK IF THE UNIT WAS IN SERVICE FOR THE YEAR 2025

Active Units will have a future date all others will be either the sold date or deactivated date.

NOTE: THIS IS A GENERAL ANALYSIS. Data shown does not represent an approved vehicle replacement plan. Actual implementation is likely to differ from the analysis shown.

ANNUAL VEHICLE MILES TRAVELED BY VEHICLE CLASS

2025 VMT

CLASS TYPE	HEAVY	LIGHT	**Total**
Automobile	30,133	5,978,843	**6,008,976**
Buses, Highway and Metro Transport	126,495		**126,495**
Buses, School Transportation	19,842		**19,842**
Excavating, Grading, Compacting, Paving and Loading Equip.	165		**165**
Motorcycles, Scooters and ATV		36,450	**36,450**
Physical Plant	2		**2**
Pick Up Trucks	57,659	11,156,667	**11,214,326**
Trailers	817,824	0	**817,824**
Trucks, Excavation	127,927		**127,927**
Trucks, General Purpose	1,175,592		**1,175,592**
Trucks, Pavement Maintenance	116,182		**116,182**
Trucks, Refuse Compacting	1,475,936		**1,475,936**
Trucks, Special Mobile Services	199,547		**199,547**
Total	**4,303,475**	**19,413,460**	**23,716,935**

NOTE: THIS IS A GENERAL ANALYSIS. Data shown does not represent an approved vehicle replacement plan. Actual implementation is likely to differ from the analysis shown.

ANNUAL FUEL CONSUMPTION

County of Sacramento - Fleet Services Division - Total Fuel Consumption - Calendar Year 2025

Fuel Type		Vehicle Class	Data Source	2025 Usage (Gallons)	Sub Total (Gallons)	Grand Total (Gallons)	VMT	COMMENTS				
Hydrogen		Passenger Cars	M5 VMT Under 10K	170 kg			11,051	Fuel quantity estimated - not included in fuel total		Factor -	65 Miles / kg	Toyota Mirai
Electricity		Passenger Cars	2025 M5 VMT	25,514 Kw			86,747	Fuel quantity estimated - not included in fuel total		Factor -	3.4 miles / Kw	Bolt
		Vans	2025 M5 VMT	25,301 Kw			43,011	Fuel quantity estimated - not included in fuel total		Factor -	1.7 miles / Kw	E transit
		DWMR	2025 M5 VMT	7,646 Kw			9,175	Fuel quantity estimated - not included in fuel total		Factor -	1.2 miles / Kw	Box Van
Unleaded		Passenger Cars	M5 Unleaded Under 10K	164,715			5,904,674		Future:	Factor -	2.1 miles / Kw	F150 Lightning
			M5 Unleaded N/A	0								
Hybrid data in green, is					164,715							
included in Passenger Car		Hybrids	M5 Unleaded Under 10K	147,880			6,019,349	Hybrid data in green, is included in Passenger Car and Light Truck Van Data.				
and Light Truck / Van												
Data. Not included in		Light Trucks and Vans	M5 Unleaded Under 10K	904,579			11,039,494					
			DWMR Hunt & Sons Unleaded	12,005								
					916,584							
		Heavy Trucks	M5 Unleaded Over 10K	175,039			1,145,317					
			M5 Unleaded N/A	0								
					175,039							
		Off Road	M5 Unleaded Under 10K	18			N/A	Off Road equipment meter is hours - not relevant to VMT				
			M5 Unleaded N/A	0			N/A					
					18							
	Unleaded Grand Total					1,256,356						
Petroleum Diesel		Heavy Trucks	DWMR Hunt & Sons Card Lock	18,393	18,393		N/A	VMT captured in M5 transactions.				
	Pet. Diesel Grand Total					18,393						
(R99) Renewable Diesel		Light Trucks and Vans	M5 R99 Under 10K	0			0					
		Heavy Trucks	M5 R99 Over 10K	172,639			726,561					
			M5 N/A	322			N/A					
		Off Road	M5 R99 Under 10K	2,890			N/A	Off Road equipment meter is hours - not relevant to VMT				
			M5 R99 Over 10K	23,904			N/A	Off Road equipment meter is hours - not relevant to VMT				
			DWMR Hunt & Sons Bulk KLF	346,476	546,231							
	R99 Grand Total					546,231						

NOTE: THIS IS A GENERAL ANALYSIS. Data shown does not represent an approved vehicle replacement plan. Actual implementation is likely to differ from the analysis shown.

ANNUAL FUEL CONSUMPTION - CONTINUED

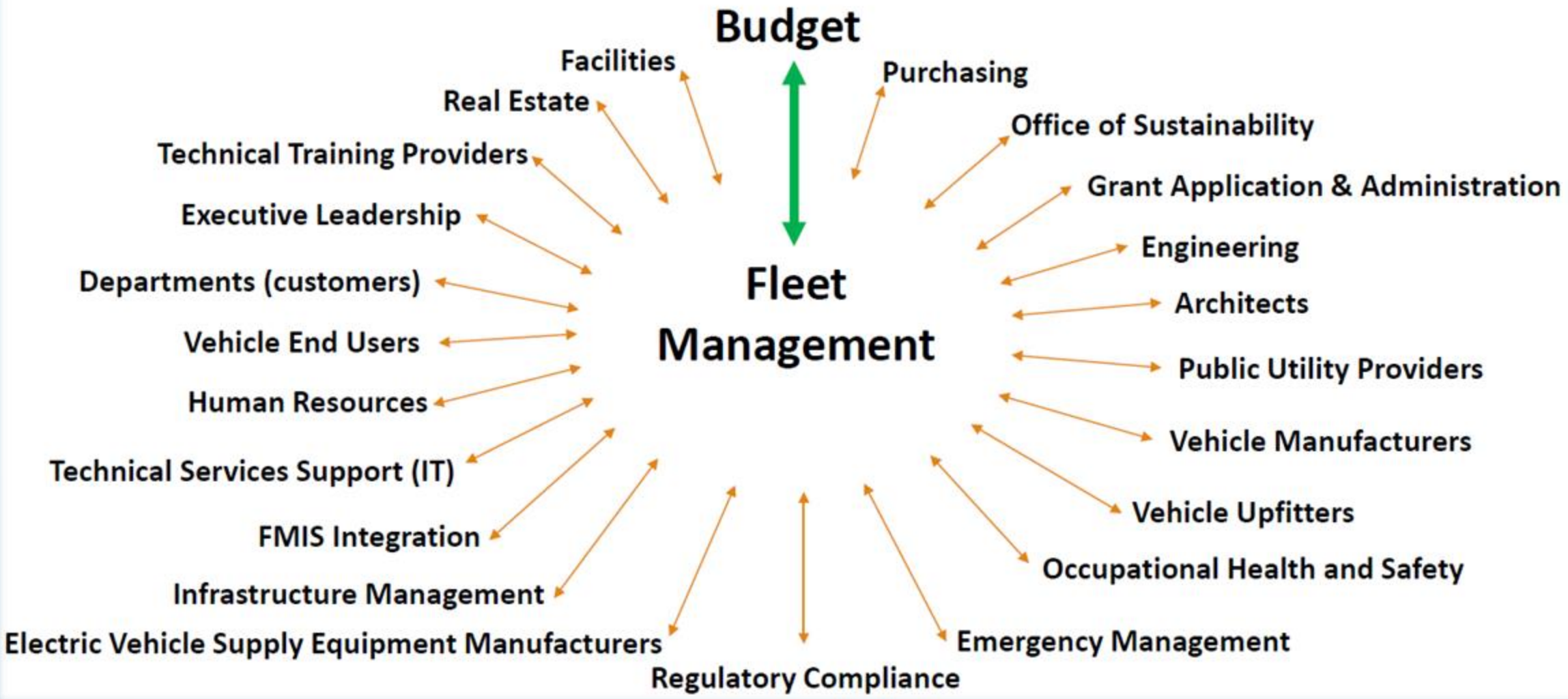
County of Sacramento - Fleet Services Division - Total Fuel Consumption - Calendar Year 2025

Fuel Type		Vehicle Class	Data Source	2025 Usage (Gallons)	Sub Total (Gallons)	Grand Total (Gallons	VMT	COMMENTS
CNG		Heavy Trucks	DWMR Clean Energy	1,894			N/A	CNG VMT captured in RNG Total VMT Below.
			DWMR Chevron	285,275	287,169		N/A	CNG VMT captured in RNG Total VMT Below.
	CNG Grand Total					287,169		
(RNG) Renewable CNG		Light Trucks and Vans	M5 Renewable CNG under 10K	1,402			14,892	
		Heavy Trucks	M5 Renewable CNG Over 10K	100,876			2,368,688	
			Slow Fill 2021 Totals	726,428				Slow Fill - 907,412 Therms - Converted to GGE Factor .800
			DWMR	172,396	1,001,102			
	RNG Grand Total					1,001,102		
(RLNG Renewable LNG)		Heavy Trucks	M5 Renewable LNG Over 10K	157,641	157,641		40,740	
	RLNG Grand Total					157,641		
Propane		Light Trucks		433			0	Incidental propane - not for motor fuel
		Heavy Trucks		5,500			19,421	Propane Aerial Lifts and Propane for Patch Trucks
		Off Road	M5 Propane Under 10K	276			N/A	Off Road equipment meter is hours - not relevant to VMT
			M5 Propane Off Road	145	6,354		N/A	Off Road equipment meter is hours - not relevant to VMT
	Propane Grand Total					6,354		
2025 GRAND TOTAL ALL FUELS						3,273,246		
2025 GRAND TOTAL - VMT							21,409,771	

			Percentage Using Hybrid Technology		Percentage Excluding Hybrid Technology	
Conventional Fuels	Alt. / Renewable Fuels					
Unleaded			1,108,476		1,256,356	
Petroleum Diesel			18,393		18,393	
	Unleaded in Hybrids			147,880		
	R99 Diesel			546,231		546,231
	CNG			287,169		287,169
	RNG			1,001,102		1,001,102
	RLNG			157,641		157,641
	Propane			6,354		6,354
		Totals	1,126,869	2,146,377	1,274,749	1,998,497
		Percentage of Total	34.43%	63.20%	38.94%	61.06%

NOTE: THIS IS A GENERAL ANALYSIS. Data shown does not represent an approved vehicle replacement plan. Actual implementation is likely to differ from the analysis shown.

Internal and External Group Collaboration Required



FLEET VEHICLE REPLACEMENT FORECASTING

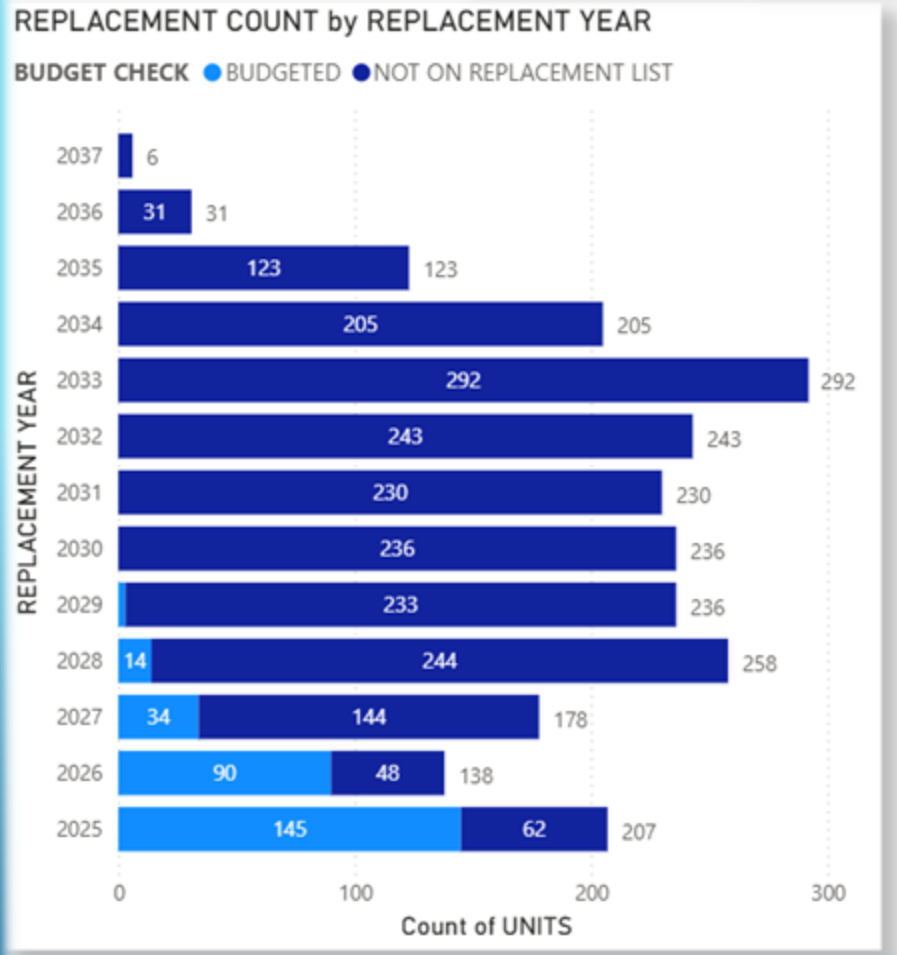
- Facilitates Regular and Scheduled Replacement of Fleet Vehicles on a pre-determined life cycle.
- Long Term Budget Planning.
- Maintains Average Fleet Age – Current Avg. Age – 5.1 years.
- Minimizes Maintenance and Operating Costs.
- Customizable for Specific Vehicle Classes.
- Allows for infrastructure planning.
- Use of these management tools has been beneficial in largely eliminating overdue replacement vehicles which will allow a strategic transition to Zero Emission and EV to meet sustainability goals and regulations.

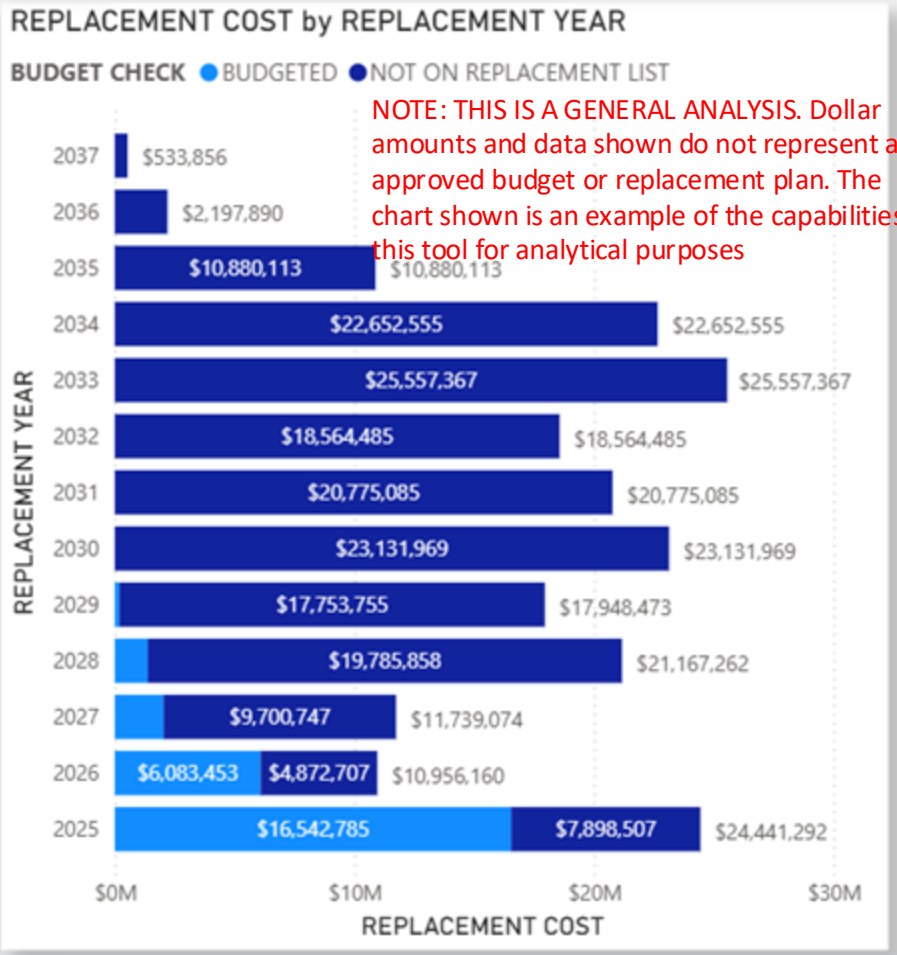
LONG TERM REPLACEMENT FORECAST

REPLACEMENT MODEL PLANNING

SACRAMENTO COUNTY FLEET SERVICES

2383	5.07	61	7.93%
UNIT COUNT	Average of AGE	Average of MONTHS IN SERVICE	INFLATION FACT





NOTE: THIS IS A GENERAL ANALYSIS. Dollar amounts and data shown do not represent an approved budget or replacement plan. The chart shown is an example of the capabilities of this tool for analytical purposes

UNIT CLASS	Average of AGE
101	4.67
102	4.58
107	3.78
110	5.33
118	12.00
122	3.63
124	5.01
126	5.69
131	4.67
132	6.61
134	6.59
135	5.55
137	4.77
140	4.62
141	4.18
142	4.41
150	4.18
151	4.11
152	4.66
153	5.12
154	4.57
156	14.00
157	7.50
158	7.82
159	5.00
160	7.83
161	7.33
162	12.50
163	8.00
164	7.36
Total	**5.07**

LONG TERM REPLACEMENT FORECAST

2403
Count of UNIT_NO

FLEET TYPE 2
- HEAVY
- LIGHT
- LIGHT-SSD

OWNED_TYPE
- DEPT OWNED
- RENTAL

STATUS_DESC
- Active unit
- Flagged for disposal

UNIT_CLASS
- Select all
- 101
- 102
- 107
- 110
- 118
- 122
- 124
- 126
- 131
- 132
- 134
- 135

USING DEPT
- Select all
- AG COMM
- ANIMAL CTRL
- ASSESSOR
- CABLE COMMISSION
- CORONER
- DA
- DCFAS
- DCS
- DCSS
- DGS
- DHA
- DHS
- DOT

CLASS_TYPE
- Select all
- Automobile
- Buses, Highway and Metro Transport
- Buses, School Transportation
- Engines, Pumps and Compressors
- Excavating, Grading, Compacting, Paving and Loading Equip.
- Farm Tractor, Implements, Industrial Tractor and Lifts

BUDGETED
263

NOT ON REPLACEMENT LIST
2140

PURCHASE COST
$0 — $1,500,000

GVWR
750 — 140000

REPLACE DATE CHECK
- GOOD
- REPLACE BY DATE

REPLACE BY MILES
- GOOD
- REPLACE BY MILE

REPLACEMENT YE...
- 2025
- 2026
- 2027
- 2028
- 2029
- 2030
- 2031
- 2032

REPLACEMENT ...
7/1/1994 — 11/8/2038

Search UNIT_NO

101001	101002
101003	101004
101304	101305
101306	101307

BUDGET CHECK
- BUDGETED
- NOT ON REPLACEMENT LIST

REPLACEMENT YEAR CHECK
- DATE
- NOW
- USAGE

LIFE CYCLE METER
0 — 200000

REPLACEMENT DETAIL

STATUS DESC	UNIT NO	YEAR	MAKE	MODEL	USING DEPT	IN_SERV_DT	MONTHS IN SERVICE	REPLACEMENT DATE	LIFE CYCLE AGE	EXPECT USAGE	METER	LASTYR USAGE	YTD USAGE	LTD MONTHLY USAGE AVG	REPLACEMENT COST NOW	REPLACEMENT COST at Replacement Date	REPLACEMENT COST SWITCH	REP DT OVER/UNDER	REP USAGE OVER/UNDER	REPLACEMENT DATE BY USAGE	REPLACI
Flagged for disposal	107506	2016	CHEVROLET	COLORADO	DOT	3/24/2016	116	3/24/2028	12	120000	106059	11058	3759	914	$38,692	$42,765	$41,788	2	13941	11/25/2026	11/25/2
Active unit	107509	2025	TOYOTA	TACOMA	AG COMM	4/11/2025	7	4/11/2035	10	100000	6007	1839	4159	858	$33,761	$58,061	$58,069	9	93993	11/25/2034	11/25/2
Active unit	107510	2024	FORD	MAVERICK	DHS	12/9/2024	11	12/9/2036	12	120000	903	506	424	82	$31,393	$57,326	$57,326	10	119097	11/25/2037	12/9/20
Active unit	107511	2024	FORD	MAVERICK	EMD	4/29/2025	7	4/29/2037	12	120000	3945	973	3117	564	$27,699	$51,869	$54,290	11	116055	11/25/2037	4/29/20
Active unit	107512	2025	TOYOTA	TACOMA	DCS	9/29/2025	2	9/29/2035	10	100000	2966	1	3279	1483	$36,644	$65,092	$51,302	9	97034	11/25/2030	11/25/2
Active unit	107700	2017	CHEVROLET	COLORADO	AG COMM	3/14/2017	104	3/14/2029	12	120000	49966	2817	2070	480	$40,962	$47,412	$47,412	3	70034	11/25/2037	3/14/20
Active unit	107701	2017	CHEVROLET	COLORADO	AG COMM	3/17/2017	104	3/17/2029	12	120000	70697	6578	3926	680	$40,962	$47,412	$47,412	3	49303	11/25/2031	3/17/20
Active unit	107702	2017	CHEVROLET	COLORADO	AG COMM	3/15/2017	104	3/15/2029	12	120000	54089	4060	2667	520	$40,962	$47,412	$47,412	3	65911	11/25/2036	3/15/20
Active unit	107703	2017	CHEVROLET	COLORADO	AG COMM	3/15/2017	104	3/15/2029	12	120000	70840	3333	2047	681	$40,962	$47,412	$47,412	3	49160	11/25/2031	3/15/20
Active unit	107706	2017	CHEVROLET	COLORADO	DOT	11/1/2017	96	11/1/2029	12	120000	64947	8887	2735	677	$38,852	$46,432	$46,432	3	55053	11/25/2032	11/1/20
Active unit	107800	2018	CHEVROLET	COLORADO	P&R	6/18/2018	89	6/18/2030	12	120000	59575	8046	4064	669	$39,116	$48,118	$48,118	4	60425	11/25/2033	6/18/20
Active unit	107801	2018	CHEVROLET	COLORADO	P&R	5/24/2018	90	5/24/2030	12	120000	49040	4911	1967	545	$39,280	$48,118	$48,118	4	70960	11/25/2036	5/24/20
Active unit	107809	2019	CHEVROLET	COLORADO	AG COMM	8/29/2018	87	8/29/2030	12	120000	64737	12534	5569	744	$37,776	$46,861	$46,861	4	55263	11/25/2031	8/29/20
Active unit	107810	2018	CHEVROLET	COLORADO	DOT	8/9/2018	87	8/9/2030	12	120000	45750	7086	2367	526	$37,776	$46,861	$46,861	4	74250	11/25/2037	8/9/203
Active unit	107913	2019	CHEVROLET	COLORADO	DGS	10/25/2019	73	10/25/2031	12	120000	11233	1931	1047	154	$40,182	$52,975	$52,975	5	108767	11/25/2037	10/25/2
Active unit	107914	2019	CHEVROLET	COLORADO	AG COMM	8/12/2019	75	8/12/2031	12	120000	46756	8242	5050	623	$36,325	$47,465	$47,465	5	73244	11/25/2035	8/12/20
Active unit	107916	2019	CHEVROLET	COLORADO	DOT	10/24/2019	73	10/24/2031	12	120000	44638	6024	2109	611	$38,415	$50,645	$50,645	5	75362	11/25/2035	10/24/2
Total							**148145**					**41075553**	**18174741**	**1796661**	**$164,370,982**	**$218,902,269**	**$214,211,030**				

REPLACEMENT DETAIL

STATUS DESC	USING DEPT NO.	DEPT NAME	USING DEPT DESC.	UNIT_CLASS	UNIT NO	YEAR	MAKE	MODEL	CATEGORY DESC	METER	MONTHS IN SERVICE	LIFE CYCLE METER	LASTYR USAGE	YTD USAGE	LTD MONTHLY USAGE AVG	PROJECTED USAGE YEARS	EXP LIFE USAGE YEAR SWITCH	LIFE CYCLE AGE	REPLACEM DATE
Flagged for disposal	BU7478-D	SSD	SSD-RCPD ADMIN 7407478000	101	101503	2015	BMW	R1200RT-P	MTRCL-LEMRKED-PM	59403	124	100000	2401	942	479	7	7.06	10	7/1/2
Flagged for disposal	BU2613-D	DOT	DOT-TRAFFIC OPER 2962613100	102	102318	2013	TOYOTA	PRIUS C	CAR-CMPT-4DR, HYBRD, GUSE-NRML PM	60632	147	120000	5419	2780	412	12	12.00	12	8/21/
Active unit	BU720234-D	DHS	DHS-CONSRT 7202900340	102	102324	2013	TOYOTA	PRIUS C	CAR-CMPT-4DR, HYBRD, GUSE-NRML PM	44813	147	120000	1373	635	305	21	12.00	12	8/15/
Flagged for disposal	BU720234-D	DHS	DHS-CONSRT 7202900340	102	102327	2013	TOYOTA	PRIUS C	CAR-CMPT-4DR, HYBRD, GUSE-NRML PM	50757	147	120000	1586	679	345	17	12.00	12	8/15/
Active unit	BU2611-D	DOT	DOT-PLANNING 2962611100	102	102328	2013	TOYOTA	PRIUS C	CAR-CMPT-4DR, HYBRD, GUSE-NRML PM	40009	147	120000	1215	461	272	25	12.00	12	8/15/
Flagged for disposal	BU6422-D	P&R	P&R-RANGERS 6401100220	107	107205	2022	FORD	MAVERICK	TRK, PU, 1/4 TON, CREW CAB, HYBRID	108943	42	120000	32843	15862	2594	0	0.36	12	5/26/
Flagged for disposal	BU215193-D	DCS	DCS-CMID LAB 2152193100	107	107922	2019	CHEVROLET	COLORADO	P/U TRK-1/4T-XCABGUSE-NRML PM	127076	74	120000	25397	11957	1717	0	-0.34	12	9/5/2
Flagged for disposal	BU780100-D	DCFAS	DCFAS-ALLOCATED COSTS 7801000100	110	110157	2021	TOYOTA	PRIUS	CAR-CMPT-4DR, HYBRD, GUSE-NRML PM	114010	57	120000	22063	6314	2000	0	0.25	12	2/10/
Active unit	BU57231-D	DCS	DCS-CODE ENF 5725723100	110	110248	2013	TOYOTA	PRIUS	CAR-CMPT-4DR, HYBRD, GUSE-NRML PM	49077	144	120000	4781	620	341	17	12.00	12	11/14
Flagged for disposal	BU780100-D	DCFAS	DCFAS-ALLOCATED COSTS 7801000100	110	110304	2013	TOYOTA	PRIUS	CAR-CMPT-4DR, HYBRD, GUSE-NRML PM	53435	146	120000	2239	933	366	15	12.00	12	9/5/2
Active unit	BU780100-D	DCFAS	DCFAS-ALLOCATED COSTS 7801000100	110	110316	2013	TOYOTA	PRIUS	CAR-CMPT-4DR, HYBRD, GUSE-NRML PM	45697	146	120000	1398	480	313	20	12.00	12	9/5/2

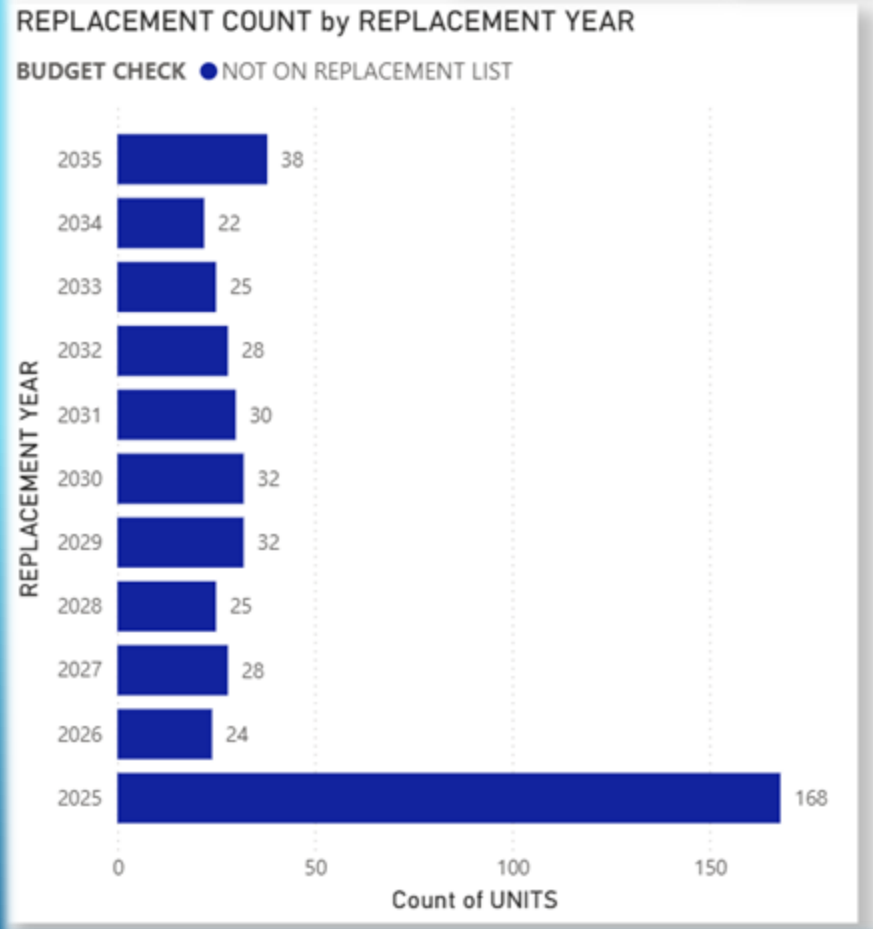
NOTE: THIS IS A GENERAL ANALYSIS. Dollar amounts and data shown do not represent an approved budget or replacement plan. The chart shown is an example of the capabilities of this tool for analytical purposes.

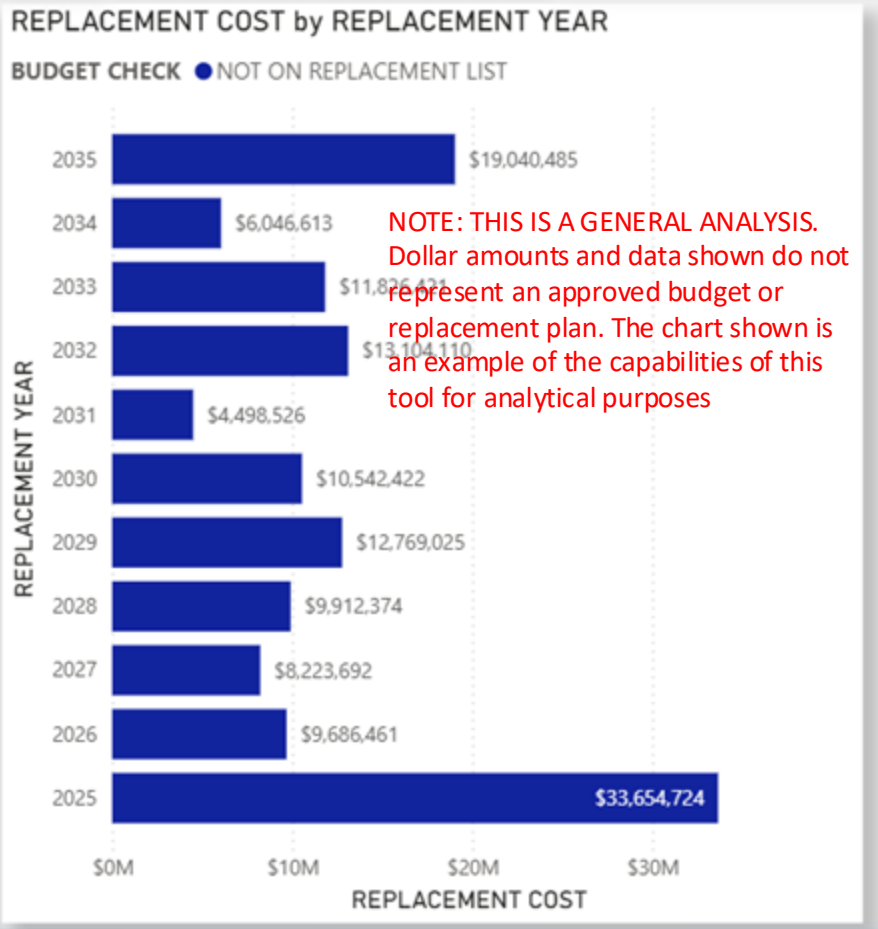
DEPARTMENT OWNED REPLACEMENT FORECAST

REPLACEMENT MODEL PLANNING

SACRAMENTO COUNTY FLEET SERVICES

452	9.47	104	8.00%
UNIT COUNT	Average of AGE	Average of MONTHS IN SERVICE	INFLATION FACT





NOTE: THIS IS A GENERAL ANALYSIS. Dollar amounts and data shown do not represent an approved budget or replacement plan. The chart shown is an example of the capabilities of this tool for analytical purposes

UNIT CLASS	Average of AGE
143	5.33
169	16.00
187	7.40
193	7.00
201	3.83
20T	7.67
236	20.00
237	18.50
239	5.61
364	19.00
383	0.33
384	9.00
393	8.00
400	10.25
660	14.70
661	6.30
701	10.33
702	6.27
704	5.83
706	9.60
707	4.00
768	2.67
769	7.00
787	3.57
888	5.38
891	3.00
893	7.00
SSI	8.00
Total	**9.47**

EV CHARGING PROJECTION – EXAMPLE 1

VEHICLE REPLACEMENT FORECAST

NOTE: The analysis below is a forecast of vehicle replacements according to a set lifecycle. It is not an approved plan, and is subject to change based on many factors. Vehicle replacement budgets are approved yearly. A ten (or more) year forecast cannot guarantee those vehicles will be replaced as indicated.

Vehicles Per Charger Factor - Generally - (3) vehicles to one Level 2 charger - rounded to the nearest even number

YEAR	Vehicle Type	Quantity	Average VMT	Total VMT in Class	Average Miles per Kw	KiloWatts	Total Average Kw per Year	Average Kw Demand per Work Day (246	Peak Kw Demand per Work Day (Adds Factor shown	Year to Year Accumulation Kw per Day	Year to Year Vehicle Accumulation	Future Outlook and Recommendations	Level 2 Chargers	DC Fast Chargers	Electrical Capacity by Hardware Rating (Rough Estimate)
								246	1.20						
2025	Passenger Sedan	5	5,158	25,790	3.4	7,585	17,640	71.71	86.05	86.05	7	Recommend (4) if there is existing electrical capacity. If increasing capacity, plan for expansion.	4	1	160 amps @ 208VAC 3 Ph. for (4) Level 2, 50 amps @ 480VAC 3 Ph. for (1) Level 3 (DCFC)
	Pickup Truck	2	10,557	21,114	2.1	10,054									
2026	Passenger Sedan	2	5,158	10,316	3.4	3,034	13,088	53.20	63.85	149.89	11		4	1	
	Pickup Truck	2	10,557	21,114	2.1	10,054									
2027	Passenger Sedan	2	5,158	10,316	3.4	3,034	103,577	421.04	505.25	655.15	33	This may be a good starting point.	10	2	400 amps @ 208VAC 3 Ph. for (10) Level 2, 100 amps @ 480VAC 3 Ph. for (2) Level 3 (DCFC)
	Pickup Truck	20	10,557	211,140	2.1	100,543									
												Start budgeting and planning for 2030/2031.			
2028	Passenger Sedan	6	5,158	30,948	3.4	9,102	49,319	200.49	240.58	895.73	47		16	4	640 amps @ 208VAC 3 Ph. for (16) Level 2, 200 amps @ 480VAC 3 Ph. for (4) Level 3 (DCFC)
	Pickup Truck	8	10,557	84,456	2.1	40,217									
2029	Passenger Sedan	2	5,158	10,316	3.4	3,034	133,740	543.66	652.39	1548.12	75		24	6	960 amps @ 208VAC 3 Ph. for (24) Level 2, 300 amps @ 480VAC 3 Ph. for (6) Level 3 (DCFC)
	Pickup Truck	26	10,557	274,482	2.1	130,706									
2030	Passenger Sedan	3	5,158	15,474	3.4	4,551	90,013	365.90	439.09	1987.20	95		30	6	1,200 amps @ 208VAC 3 Ph. for (30) Level 2, 300 amps @ 480VAC 3 Ph. for (6) Level 3 (DCFC)
	Pickup Truck	17	10,557	179,469	2.1	85,461									
												Due to increase in 2031 to 122 units, installing chargers in advance of the increase likely will be needed which effectively increases the 2030 target.	40	8	1,600 amps @ 208VAC 3 Ph. for (40) Level 2, 400 amps @ 480VAC 3 Ph. for (8) Level 3 (DCFC).
												Start budgeting and planning for 2032.			
2031	Passenger Sedan	4	5,158	20,632	3.4	6,068	121,693	494.69	593.62	2580.83	122		40	8	
	Pickup Truck	23	10,557	242,811	2.1	115,624									
2032	Passenger Sedan	8	5,158	41,264	3.4	12,136	92,571	376.30	451.56	3032.39	146		50	8	2,000 amps @ 208VAC 3 Ph. for (50) Level 2, 400 amps @ 480VAC 3 Ph. for (8) Level 3 (DCFC)
	Pickup Truck	16	10,557	168,912	2.1	80,434									
2033	Passenger Sedan	7	5,158	36,106	3.4	10,619	70,945	288.39	346.07	3378.46	165		55	8	2,200 amps @ 208VAC 3 Ph. for (55) Level 2, 400 amps @ 480VAC 3 Ph. for (8) Level 3 (DCFC)
	Pickup Truck	12	10,557	126,684	2.1	60,326									
												Start budgeting and planning for 2035.			
2034	Passenger Sedan	4	5,158	20,632	3.4	6,068	111,638	453.81	544.58	3923.04	190		60	8	2,400 amps @ 208VAC 3 Ph. for (60) Level 2, 400 amps @ 480VAC 3 Ph. for (8) Level 3 (DCFC)
	Pickup Truck	21	10,557	221,697	2.1	105,570									
2035	Passenger Sedan	4	5,158	20,632	3.4	6,068	46,285	188.15	225.78	4148.82	202		65	10	2,600 amps @ 208VAC 3 Ph. for (65) Level 2, 500 amps @ 480VAC 3 Ph. for (10) Level 3
	Pickup Truck	8	10,557	84,456	2.1	40,217									

NOTE: All circuit recomendations shown are based on simple multiplication of single charger requirements multiplied by the number of recommended charging ports. These are worst case estimations only and are not based on engineered circuits. I reality, most chargers have charge management software to manage rate of charge and optimize the available electrical capacity. There are complete sytems available to manage electrical loads based on demand, number of vehicles that need to charge, and when they need to achieve full charge. A qualified electrical engineer, specializing in EV charging infrastructure, likely could design systems requiring much less capacity than indicated on this sheet.

NOTE: THIS IS A GENERAL ANALYSIS. Data shown does not represent an approved vehicle replacement plan. Actual implementation is likely to differ from the analysis shown.

EV CHARGING PROJECTION – EXAMPLE 2

VEHICLE REPLACEMENT FORECAST

NOTE: The analysis below is a forecast of vehicle replacements according to a set lifecycle. It is not an approved plan, and is subject to change based on many factors. Vehicle replacement budgets are approved yearly. A ten (or more) year forecast cannot guarantee those vehicles will be replaced as indicated in this projection.

Only On-Road / Powered Fleet Owned vehicles are represented in this analysis. Off-Road equipment, trailers, auxiliary equipment and tools are not included in this projection / analysis. Department Owned vehicles/ equipment are not included in this analysis.

Vehicles Per Charger Factor – Generally – (2) vehicles to one Level 2 charger – rounded to the nearest even number

YEAR	Vehicle Type	Total Replacements	EV Target Quantity	Average Annual VMT	Total Annual VMT in Class	Average Miles per Kw	Total Kw per Year	Average Kw Demand per Work Day (246	Peak Kw Demand per Work Day (Multiples Factor shown	Year to Year Accumulation Kw per Day	Year to Year Vehicle Accumulation	Comments	Future Outlook and Recommendations	Level 2 Chargers	DC Fast Chargers	Electrical Capacity by Hardware Rating (Rough Estimate)
								246	1.20							
												Some Class 3 – 7 ordered prior to CARB ACF				
2026	Automobile Class 1	1	0	4,882	0	3.4	0	0.00	0.00			**2025 EV purchases to arrive in 2026 are represented.**				Level 2:
	Pickup Truck 2 – 2b	3	6	6,900	41,400	2.1	19,714	80.14	96.17			Replace (3) 3-5 Class with Class 2b P/U				(4) L2 Ports support 6 pickups
	Cab / Chassis 3-5	15	1	9,014	9,014	0.8	11,268	45.80	54.96			Replace (1) 162 with Rizon				(1) L2 Port for Rixon at parking location
	Cab / Chassis 6-7	7	0	4,298	0	0.5	0	0.00	0.00							(1) DCFC front for Opportunity charging
	Class 8	0	0	2,581	0	0.5	0	0.00	0.00							200 amps @ 208VAC 3 Ph. for (5) Level 2, 50
	TOTALS	26	7				30,982	125.94	151.13	151.13	7.00			5	1	amps @ 480VAC 3 Ph. for (1) Level 3 (DCFC).
	EV Purchases may not always be 1:1 due to necessary class changes, EV offsets in other parts of the fleet, or EV purchases made in previous years.															
2027	Automobile Class 1	6	6	4,882	29,292	3.4	8,615	35.02	42.03			4 Passenger deferred from 2026- (2) From 2028 list with miles				
	Pickup Truck 2 – 2b	4	2	6,900	13,800	2.1	6,571	26.71	32.06			If Claas 3-5 don't work as PU – Replace 132 PU with 131 EV PU				Add:
	Cab / Chassis 3-5	3	0	9,014	0	0.8	0	0.00	0.00			Replace (2) Class 3-5 with (2) Class 2b Pickups				(2) L2 Ports
	Cab / Chassis 6-7	1	1	4,298	4,298	0.5	8,596	34.94	41.93			Elgin Broom Bear – Budgeted for EV				(3) DCFC in rear lot (2) Dump Truck, (1) Sweeper
	Class 8	4	2	2,581	5,162	0.5	10,324	41.97	50.36			(2) 176 Dumps – Budgeted for EV				320 amps @ 208VAC 3 Ph. for (8) Level 2, 200
	TOTALS	18	11				34,107	138.65	166.37	317.50	18.00		This may be a good starting point.	8	4	amps @ 480VAC 3 Ph. for (4) Level 3 (DCFC).
2028	Automobile Class 1	1	1	4,882	4,882	3.4	1,436	5.84	7.00			(1) Passenger deferred from 2026				
	Pickup Truck 2 – 2b	0	2	6,900	13,800	2.1	6,571	26.71	32.06							Add:
	Cab / Chassis 3-5	6	4	9,014	36,056	0.8	45,070	183.21	219.85							(4)L2 Ports
	Cab / Chassis 6-7	1	0	4,298	0	0.5	0	0.00	0.00							(2) DCFC at added vehicle parking location
	Class 8	1	1	2,581	2,581	0.5	5,162	20.98	25.18							480 amps @ 208VAC 3 Ph. for (12) Level 2, 300
	TOTALS	9	8				58,239	236.75	284.09	601.60	26.00			12	6	amps @ 480VAC 3 Ph. for (6) Level 3 (DCFC).
2029	Automobile Class 1	0	0	4,882	0	3.4	0	0.00	0.00							
	Pickup Truck 2 – 2b	3	1	6,900	6,900	2.1	3,286	13.36	16.03							
	Cab / Chassis 3-5	4	3	9,014	27,042	0.8	33,803	137.41	164.89			(3) 161 from 2027 moved to 2029. (2) 163 from 2028				Add:
	Cab / Chassis 6-7	6	2	4,298	8,596	0.5	17,192	69.89	83.86			Some offsets are in 2028 purchases				(2) DCFC at parking locations for new Class 6-7
	Class 8			2,581	0	0.5	0	0.00	0.00			Defer 178-103 and 104 – Condition. Open Discussion.				480 amps @ 208VAC 3 Ph. for (12) Level 2, 400
	TOTALS	13	6				54,280	220.65	264.78	866.38	32.00			12	8	amps @ 480VAC 3 Ph. for (8) Level 3 (DCFC).
2030	Automobile Class 1	1	1	4,882	4,882	3.4	1,436	5.84	7.00			**2030 – Expected to be CARB ACF 100% purchase over 8,500 nust be EV**				
	Pickup Truck 2 – 2b	8	8	6,900	55,200	2.1	26,286	106.85	128.22			All must be ev – OTHER THAN EXEMPTIONS.				Add:
	Cab / Chassis 3-5	7	7	9,014	63,098	0.8	78,873	320.62	384.74			Discuss accelerating replacement to 2029?				(8) L2 ports for 15 new Class 2 through 5
	Cab / Chassis 6-7	8	8	4,298	34,384	0.5	68,768	279.54	335.45			DGS approval needed due to depreciation schedule.				(8) DCFC at parking locations for 8 new Class 6-7 .
	Class 8	0	0	2,581	0	0.5	0	0.00	0.00							800 amps @ 208VAC 3 Ph. for (20) Level 2, 800
	TOTALS	24	24				175,362	712.85	855.42	1721.81	56.00	(42) Class 1 thru 5, (14) Class 6 thru 8		20	16	amps @ 480VAC 3 Ph. for (16) Level 3 (DCFC).

NOTE: THIS IS A GENERAL ANALYSIS. Data shown does not represent an approved vehicle replacement plan. Actual implementation is likely to differ from the analysis shown.

FORECASTING ELECTRIC VEHICLE COST

BY VEHICLE TYPE – LIGHT EQUIPMENT

Passenger Cars and Light Pickups

- Passenger cars and trucks are being manufactured currently. Availability has been limited for fleet type vehicles.
- Retail, Wholesale, CoOp Contracts, State Contract pricing is known.
- Estimates and Assumptions can be made based on current models, manufacturer pricing, and accounting for inflation.
- Manufacturer's are discontinuing many fleet trim levels for more profitable higher trim levels.

EV TRANSITION FORECAST – LIGHT EQUIPMENT

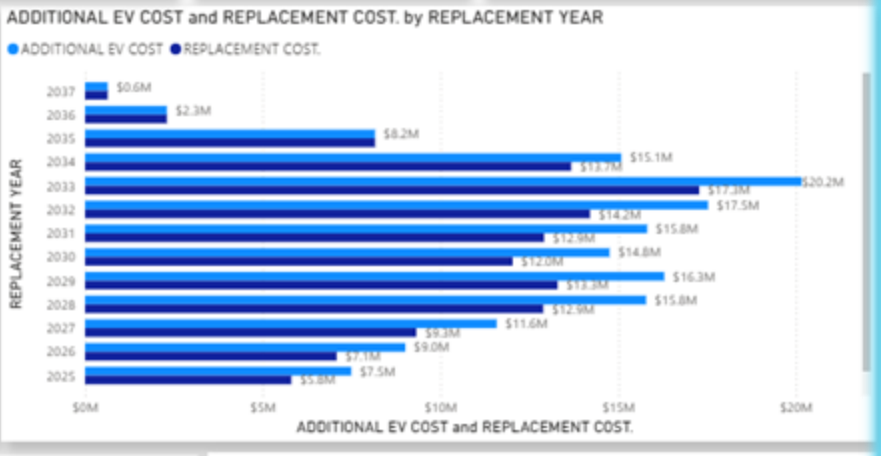
SACRAMENTO COUNTY FLEET SERVICES

EV TRANSITION FORECAST

CHART

2029	7.93%	30%	$130M	$25M	$155M
Unit Count	Avg INFLATION RATE	Average of VAR_EV_MARKUP	REPLACEMENT COST	Sum of ADDITIONAL EV COST	Sum of EV ESTIMATED COST + INFLATION COST

REPLACEMENT YEAR	Count of UNIT NO	Sum of EV ESTIMATED COST + INFLATION COST	Sum of REPLACEMENT COST
2037	7	$635,884	$635,884
2036	32	$2,300,719	$2,300,719
2035	107	$8,157,111	$8,157,111
2034	183	$15,082,880	$13,673,404
2033	256	$20,157,027	$17,275,995
2032	233	$17,523,459	$14,202,514
2031	192	$15,811,651	$12,913,056
2030	196	$14,753,412	$12,028,495
2029	208	$16,292,980	$13,291,416
2028	209	$15,779,331	$12,887,282
2027	166	$11,579,075	$9,316,694
2026	122	$9,009,272	$7,077,033
2025	114	$7,488,434	$5,800,939
	4	$360,202	$360,202
Total	2029	$154,931,437	$129,920,743



CLASS TYPE	Count of UNIT NO	EV EST MARKUP	Sum of REPLACEMENT COST	Sum of EV ESTIMATED COST + INFLATION COST
Motorcycles, Scooters and ATV	4		$138,132	$138,132
Trucks, Street Sanitation/Sewer Cleaning	1	30%	$230,159	$299,207
Motorcycles, Scooters and ATV	5	30%	$262,398	$341,117
Vans	96		$7,061,270	$7,061,270
Automobile	152		$8,428,171	$8,428,171
Vans	152	30%	$8,831,074	$11,480,397
Pick Up Trucks	376		$30,924,190	$30,924,190
Automobile	609	30%	$29,116,274	$37,851,156
Pick Up Trucks	634	30%	$44,929,075	$58,407,797
Total	2029		$129,920,743	$154,931,437

DEPT NAME	Count of UNIT NO	Sum of EV ESTIMATED COST + INFLATION COST	Sum of REPLACEMENT COST
AG COMM	36	$2,648,364	$2,155,582
ANIMAL CTRL	14	$2,897,875	$2,390,388
ASSESSOR	1	$55,595	$42,765
CABLE COMMISSION	1	$72,126	$55,482
CORONER	5	$300,515	$268,976
DA	80	$4,842,075	$4,007,170
DCFAS	235	$14,153,950	$11,619,378
DCS	199	$13,269,051	$11,007,552
DCSS	3	$182,816	$140,628
DGS	109	$9,733,467	$8,036,540
DHA	69	$4,427,115	$3,627,546
DHS	46	$2,989,615	$2,566,532
DOT	111	$14,685,772	$12,104,866
DTECH	10	$646,953	$532,624
DWMR	24	$1,602,172	$1,380,800
Total	2029	$154,931,437	$129,920,743

ASSIGNED LIGHT EQUIP
2029
Count of UNIT NO

1091	140000
Min of GVWR	Max of GVWR

OWNED TYPE	Count of UNIT NO
RENTAL	2029
Total	2029

NOTES:

NOTE: THIS IS A GENERAL ANALYSIS. Dollar amounts and data shown do not represent an approved budget or replacement plan. The chart shown is an example of the capabilities of this tool for analytical purposes

FORECASTING ELECTRIC VEHICLE COST

BY VEHICLE TYPE – HEAVY EQUIPMENT

Heavy Duty Trucks

- Currently suitable EV truck chassis are not available to build most County medium and heavy municipal service trucks. Available configurations do not allow for service body installations.
- Weight of electric chassis are much heavier. Batteries / Components occupy frame space.
- Most heavy manufacturers are not at scaled production for vocational trucks.
- Many aftermarket and EV startups – one or more may fill the void but cost is currently unknown.
- Fleet cost assumptions are based on models for which manufacturers have advertised retail pricing.
- County heavy municipal trucks require major upfit. Cost increase is not a straight percentage increase.
- Regulatory compliance strategies often involve a change in vehicle class, or a purchase of an EV in a lighter vehicle class to offset a purchase of an ICE heavy truck that cannot yet be electrified.

EV TRANSITION FORECAST – HEAVY EQUIPMENT

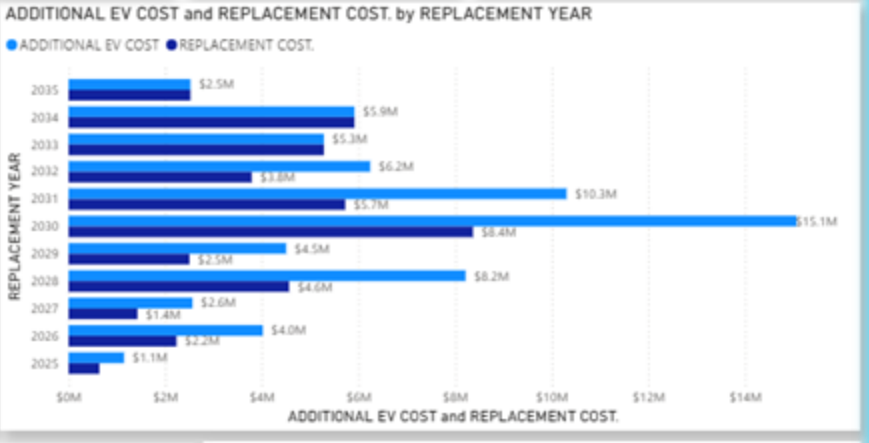
SACRAMENTO COUNTY FLEET SERVICES

EV TRANSITION FORECAST

CHART

117	8.00%	80%	$43M	$23M	$66M
Unit Count	Avg INFLATION RATE	Average of VAR_EV_MARKUP	REPLACEMENT COST	Sum of ADDITIONAL EV COST	Sum of EV ESTIMATED COST + INFLATION COST

REPLACEMENT YEAR	Count of UNIT NO	Sum of EV ESTIMATED COST + INFLATION COST	Sum of REPLACEMENT COST
2035	7	$2,521,524	$2,521,524
2034	11	$5,914,548	$5,914,548
2033	11	$5,283,411	$5,283,411
2032	12	$6,241,126	$3,790,044
2031	18	$10,303,300	$5,724,055
2030	25	$15,061,420	$8,367,456
2029	9	$4,502,432	$2,501,351
2028	12	$8,214,799	$4,563,777
2027	4	$2,564,057	$1,424,476
2026	6	$4,019,183	$2,232,880
2025	2	$1,149,184	$638,435
Total	117	$65,774,984	$42,961,957



CLASS TYPE	Count of UNIT NO	EV EST MARKUP	Sum of REPLACEMENT COST	Sum of EV ESTIMATED COST + INFLATION COST
Trucks, Special Mobile Services	1		$432,813	$432,813
Trucks, Street Sanitation/Sewer Cleaning	6		$4,277,178	$4,277,178
Trucks, General Purpose	13		$4,284,369	$4,284,369
Trucks, Excavation	7	80%	$2,660,144	$4,788,259
Trucks, Pavement Maintenance	11		$5,451,314	$5,451,314
Trucks, Pavement Maintenance	8	80%	$3,975,382	$7,155,687
Trucks, Special Mobile Services	15	80%	$4,906,777	$8,832,198
Trucks, Street Sanitation/Sewer Cleaning	11	80%	$5,420,033	$9,756,060
Trucks, General Purpose	45	80%	$11,553,947	$20,797,105
Total	117		$42,961,957	$65,774,984

DEPT NAME	Count of UNIT NO	Sum of EV ESTIMATED COST + INFLATION COST	Sum of REPLACEMENT COST
AG COMM	1	$659,616	$366,453
DGS	8	$3,892,471	$2,162,484
DOT	63	$36,954,808	$24,411,675
FLEET	1	$428,700	$428,700
P&R	1	$141,618	$141,618
SSD	5	$1,761,480	$1,315,296
WR	38	$21,936,290	$14,135,731
Total	117	$65,774,984	$42,961,957

ASSIGNED HEAVY EQUIP
117
Count of UNIT NO

14500	66000
Min of GVWR	Max of GVWR

OWNED TYPE	Count of UNIT NO
RENTAL	117
Total	117

NOTES:

NOTE: THIS IS A GENERAL ANALYSIS. Dollar amounts and data shown do not represent an approved budget or replacement plan. The chart shown is an example of the capabilities of this tool for analytical purposes

ELECTRIC VOCATIONAL TRUCK COST ESTIMATING

Example:

County of Sacramento heavy service truck. Total cost in this example was 40% chassis and 60% body and upfit.

Total cost of truck shown in 2018 - $222,735

Estimate for diesel replacement in 2028 – $400,923

<u>Estimate to Convert to EV:</u>

Chassis Cost 40% =	$160,370 **X 300%** (**Convert to EV**)	= $481,108
Body and Upfit 60% =	$240,554 Equivalent Body and Upfit	= <u>$240,554</u>
		= **$721,662**

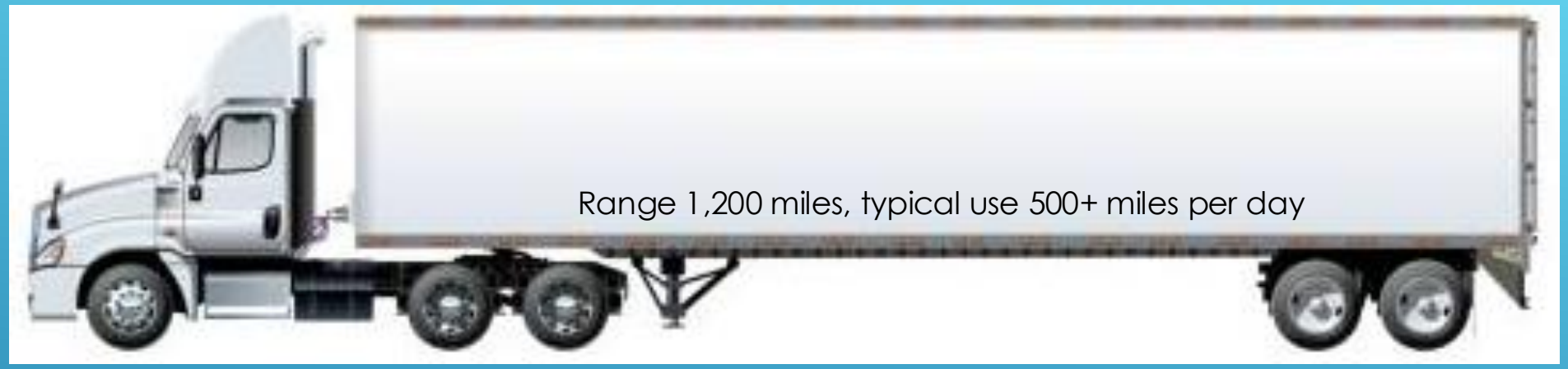
Net Increase in this example is 80.0%

TOYOTA MIRAI – HYDROGEN FUEL CELL

Vehicle Weight – 4,080 pounds
Gross Vehicle Weight Rating (GVWR) – 4,810
Payload of 730 pounds represents 18% of the Vehicle Weight
Advertised Range – 312 Miles
Hydrogen Fuel Capacity – 5 kg @ $29.99 / kg = $149.95
Fuel Cost Per Mile = $0.48

AVERAGE DIESEL TRACTOR TRAILER

$150,000



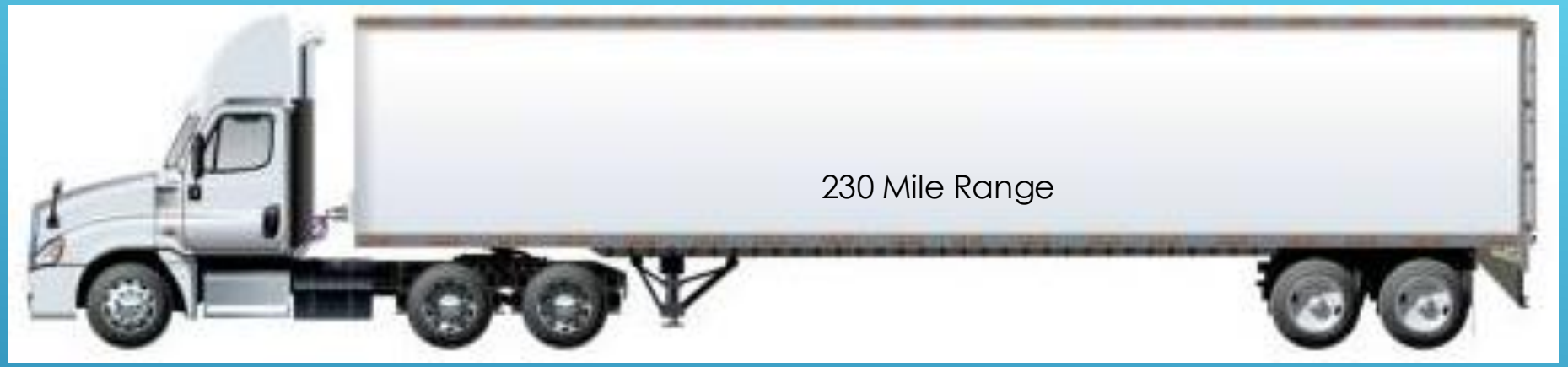
Tractor / Trailer Combination Empty Weight – 30,000 pounds
(Tractor Weight Vehicle – Avg 16,500 Trailer Weight – 13,500 pounds)

Gross Combined Weight Rating (GCWR) – 80,000 pounds
Payload of 50,000 pounds represents 167% of the vehicle weight
Diesel Range (based on 200 gallons @ 6.0 mpg) – 1,200 Miles
Fuel Capacity – 200 gallons @ $6.00 per gallon = $1,200
Fuel Cost Per Mile = $1.00

Refueling Time – 15 minutes

ELECTRIC TRACTOR TRAILER

$450,000



Tractor / Trailer Combination Empty Weight – 35,500 pounds

(Tractor Weight Vehicle – Avg 22,000 Trailer Weight – 13,500 pounds)

Gross Combined Weight Rating (GCWR) – 80,000 pounds

(Exemption of 2,000 pounds for ZEV does not increase axle weight ratings or change bridge weight laws – tractor and trailer must be properly spec'd for exemption to apply)

Payload Decreases 11% from 50,000 to 44,500 pounds

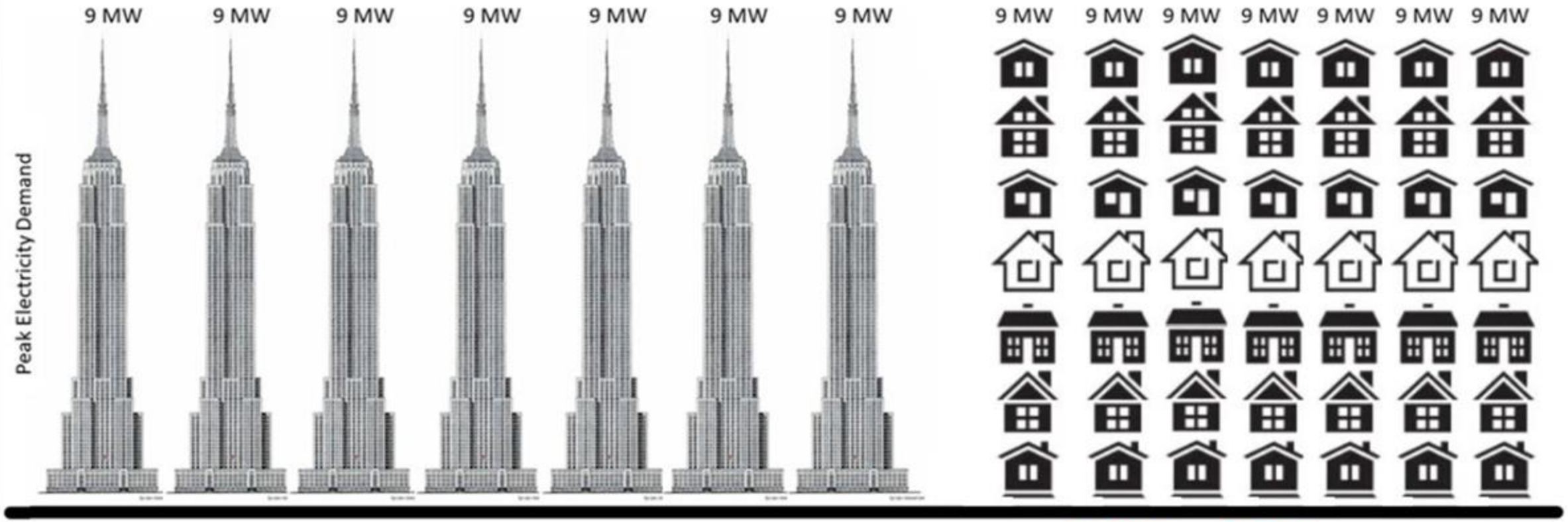
Electric Range – 230 miles

Battery Capacity – 438 kwh @ $0.45 kw = $197

Fuel Cost Per Mile = $0.86

Refueling Time – 1.5 hrs. to 8.0 hrs.

Charging Infrastructure Example – 454 Trucks Daily Electricity Consumption



7 Empire State Building

28,350 to 47,250 Homes *

City of Chino – 28,654 Homes
City of Concord – 47,816 Homes

Varies Between 350 – 750 Homes per MW Depending on Location in U.S. and Size of Home

USE OF GRANTS AND INCENTIVES

- Assess Grant / Incentive Requirements
  - Does it meet your use case?
  - Are there restrictions? Fleet vs Public use? Regulatory Restrictions?
  - Can you meet the timelines?
  - Long Term Obligations – Data Collection and Reporting?
  - Do you have the resources (hardware, software, personnel) to meet requirements?
  - Does the benefit outweigh the costs of complying with grant requirements?
  - Who will draft the grant application?
  - Can you make a competitive business case compared to other applicants?
- Pre-Planned and /or Permitted Projects are an Advantage
  - A "Shovel Ready" project is a huge advantage in meeting grant / incentive application deadlines.

INFRASTRUCTURE PLANNING AND DEVELOPMENT

HOW DO YOU MAKE SENSE OF IT ALL?

- Data, Data, Data!
- Process improvement
- Internal Reporting
- Fleet Performance Measures and KPIs
- Understand your Fleet and Your Customers - Communication
- Identify "Low Hanging Fruit"

  Regulatory Compliance – Identify where compliance intersects other fleet initiatives.

  Where is the most fuel consumed?

  What alternatives are available?

  The cleanest gallon of fuel is the gallon that is never consumed!

- Third Party Consulting

  Fleet Analysis and EV Transition Implementation Plan

  Facility Assessment, Energy Modeling, Retrofit, Charging Infrastructure Plan

  Grant Writer

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