



FLEET SERVICES DIVISION



Ronald Wirth

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

EV Charging and Infrastructure Development



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 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

RENEWABLE FUELS AND ADVANCED TECHNOLOGY

- Entire Refuse Fleet, 153 Trucks, running on Renewable Natural Gas (RNG).
- Department of Transportation, 13 Trucks, running on Renewable Natural Gas (RNG).
- Nearly 1.3 M Gasoline Gallon Equivalent (GGE) of RNG consumption in 2025.
- Remaining Diesels (290 On and Off Road) running on Renewable Diesel (R99).
- 546K Gallons of R99 consumption in 2025.
- 736 Light Duty Hybrids – Including in Law Enforcement Service.
- 4 Hydrogen Fuel Cell
- 63.2% of 2025 Fuel Consumption was Renewable Fuels or Hybrid/Plug In/Fuel Cell
(61% Renewable if Hybrid Fuel Consumption is not included.)
- 49+% Greenhouse Gas (GHG) reduction by using Renewable, Alternative and Electric VS. equivalent consumption of petroleum fuels.

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.

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



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.



COUNTY CREWS AND EQUIPMENT IN ACTION





STRATEGY

➤ **Light Fleet -**

Passenger Cars

Pickups

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!

Capital Cost Management and Budget – Long Term

Do vehicle lifecycles and replacement policy align with your electrification strategy?

Capital, Grants, Incentives for charging Infrastructure

Property – Owned or Leased?

Will your electrical utility be able to deliver capacity on your timeline?

Contingency Plan for Interim Charging?

Outside Consulting?

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 Pav. | | Crack seal - One May offset other "162" |
| | | | | | | | | 162-004 | DOT Pav. | | 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 |

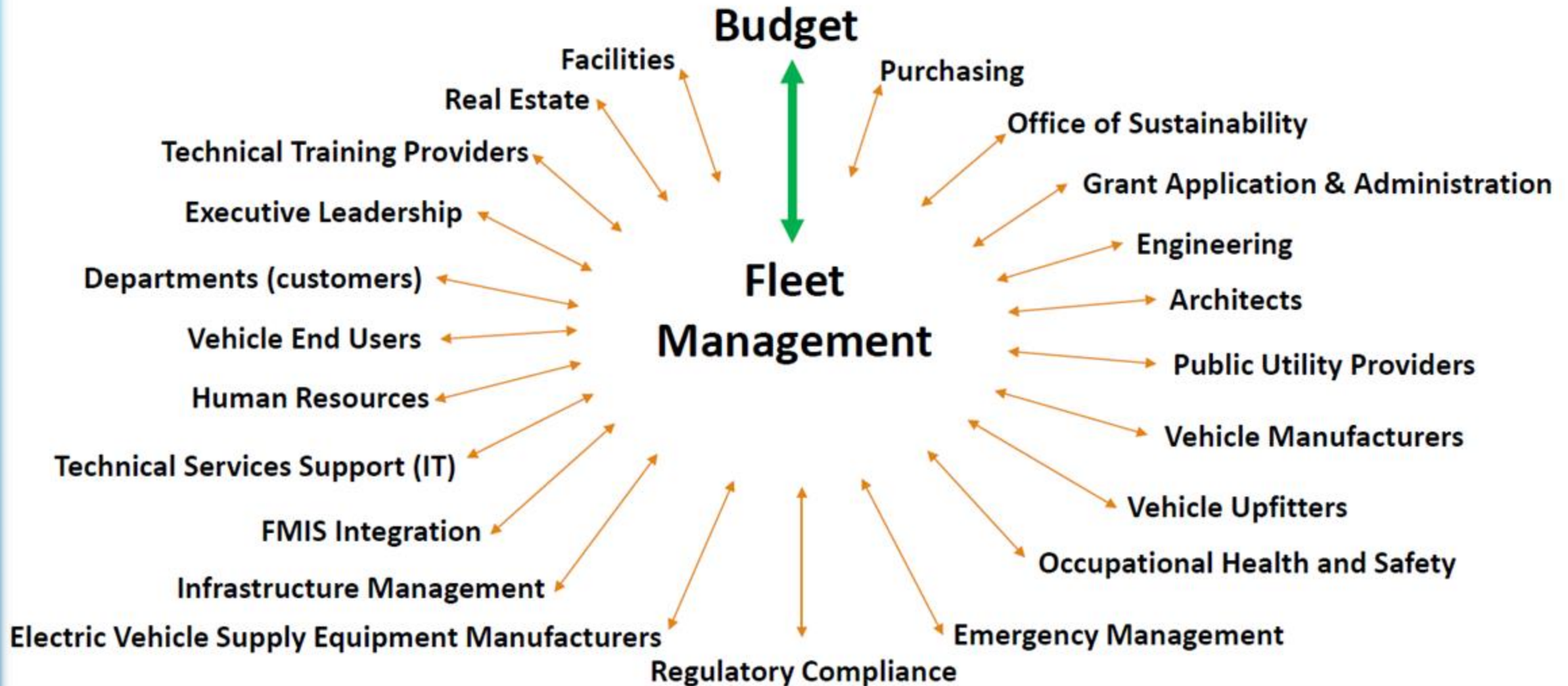




MAXIMIZE THE BENEFITS OF YOUR DATA

- **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**

Internal and External Group Collaboration Required



GPS / TELEMATICS BENEFITS

- GPS / Telematics is the most efficient method to achieve data collection and reporting.
- Nearly all smog checks are satisfied 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.
- Off Road emission testing requirements 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

GPS / TELEMATICS IN MUNICIPAL FLEETS

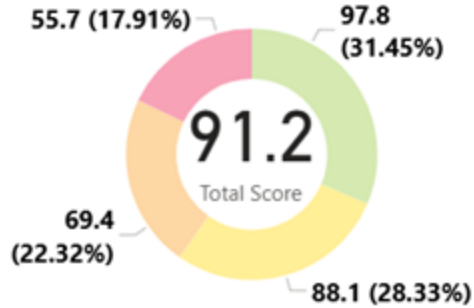
- Conduct Pilots to identify the system and supplier that works best for your application.
- Identify Approval Levels - City Council, Board of Supervisors, Director
- Transportation Policy
- Bargaining Unit Notification / Meetings
- Consult Purchasing – Identify Means to Purchase. State Contract, Co-Op 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.

GEOTAB TELEMATICS / POWER BI DASHBOARD

DEPARTMENT DRIVER SAFETY SCORECARD

Reset Filters

Total Score by Scoring Classification Ranking



Scoring Classification Ranking

- Low Risk
- Mild Risk
- Medium Risk
- High Risk

FLEET VEHICLE COUNT

2632

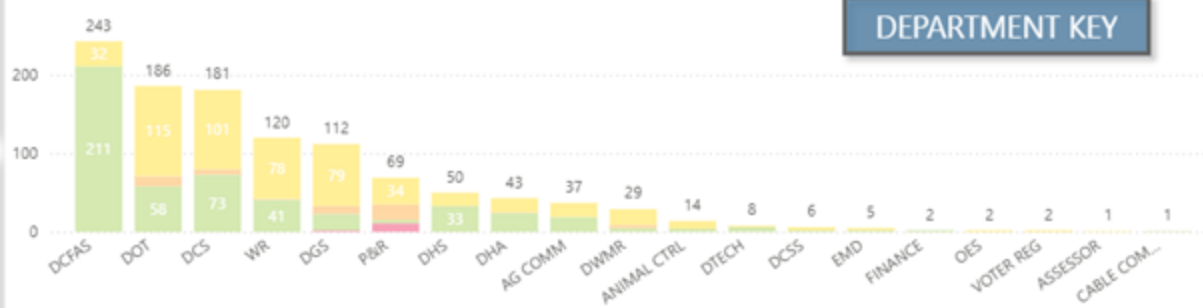
Count of UNIT NO

GPS INSTALLED

1219

Count of UNIT NO

Scoring Classification Ranking



DEPARTMENT KEY

Department Safety Scorecard

Vehicle Safety Scorecard

Safety Benchmark

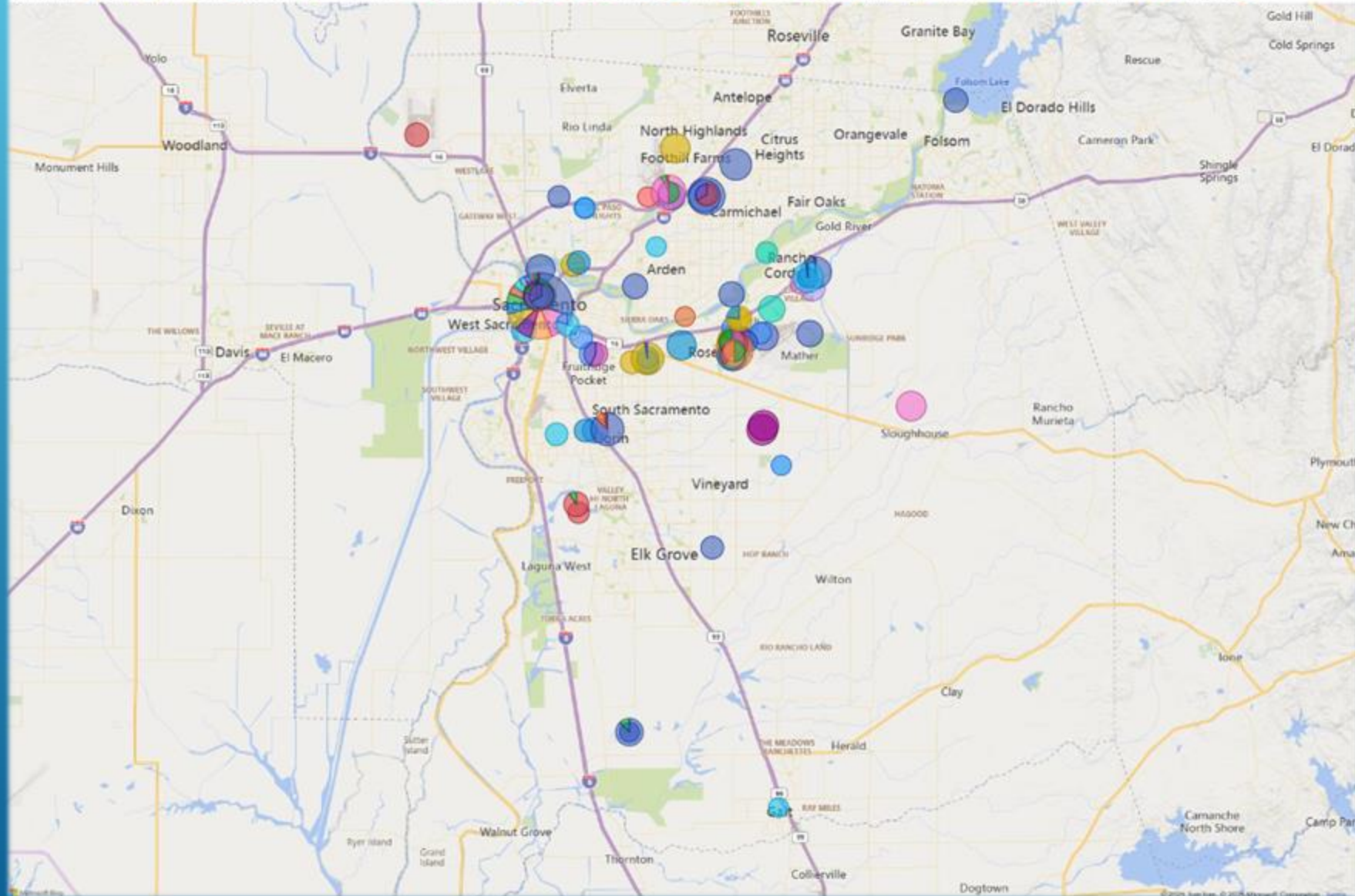
Incidents

| DEPT NAME | FLEET# | GEOTAB# | Distance (mi) | Total Score | Scoring Classification | Harsh Acceleration | Harsh Braking | Harsh Cornering | No Seat Belt 6+ mph | Speeding | Total Trips | Speeding 10+ mph over posted speed limit. | Excessive Speed over 90 MPH Count | No Seat Belt 6+ mph | Harsh Acceleration | Harsh Braking | Harsh Cornering |
|------------------|--------|---------|---------------|-------------|------------------------|--------------------|---------------|-----------------|---------------------|----------|-------------|---|-----------------------------------|---------------------|--------------------|---------------|-----------------|
| AG COMM | 40 | 19 | 47335 | 97.4 | Low Risk | 93.7 | 99.5 | 91.2 | 96.0 | 98.7 | 1665 | 209 | 0 | 750 | 17 | 17 | 367 |
| AG COMM | 40 | 18 | 43550 | 89.2 | Mild Risk | 79.5 | 96.8 | 77.3 | 70.0 | 99.2 | 8400 | 146 | 0 | 6033 | 72 | 123 | 801 |
| ANIMAL CTRL | 17 | 4 | 33885 | 96.4 | Low Risk | 95.9 | 99.8 | 96.6 | 89.2 | 96.5 | 1426 | 136 | 0 | 995 | 40 | 4 | 132 |
| ANIMAL CTRL | 17 | 10 | 73212 | 87.6 | Mild Risk | 77.7 | 99.3 | 89.6 | 59.1 | 95.5 | 20843 | 656 | 0 | 17455 | 197 | 44 | 714 |
| ASSESSOR | 1 | 1 | 2172 | 92.7 | Mild Risk | 77.0 | 99.1 | 83.9 | 84.4 | 99.0 | 200 | 8 | 0 | 105 | 50 | 2 | 35 |
| CABLE COMMISSION | 1 | 1 | 1381 | 96.6 | Low Risk | 84.8 | 100.0 | 84.8 | 98.5 | 99.9 | 50 | 1 | 0 | 7 | 21 | 0 | 21 |
| DCFAS | 247 | 211 | 923647 | 97.8 | Low Risk | 94.8 | 98.6 | 92.2 | 97.9 | 98.2 | 21760 | 5286 | 0 | 4324 | 20 | 1133 | 6701 |
| DCFAS | 247 | 32 | 81845 | 93.2 | Mild Risk | 78.7 | 98.3 | 75.3 | 92.1 | 97.5 | 6562 | 638 | 0 | 1971 | 57 | 132 | 2004 |
| DCS | 200 | 73 | 346895 | 97.7 | Low Risk | 93.8 | 99.4 | 90.9 | 97.8 | 98.7 | 9711 | 1170 | 0 | 3111 | 30 | 161 | 3091 |
| DCS | 200 | 7 | 52324 | 71.2 | Medium Risk | 45.0 | 98.8 | 38.4 | 21.1 | 93.7 | 26662 | 584 | 0 | 19465 | 456 | 57 | 3362 |
| DCS | 200 | 101 | 518976 | 88.0 | Mild Risk | 76.8 | 99.1 | 78.6 | 67.2 | 95.6 | 102869 | 5162 | 0 | 75653 | 124 | 322 | 9236 |
| DCSS | 6 | 2 | 7931 | 96.4 | Low Risk | 95.8 | 98.2 | 89.7 | 90.9 | 99.3 | 364 | 22 | 0 | 213 | 17 | 14 | 82 |
| DCSS | 6 | 4 | 17040 | 92.7 | Mild Risk | 89.3 | 97.1 | 65.3 | 88.9 | 98.5 | 1482 | 63 | 0 | 543 | 37 | 33 | 697 |
| DGS | 128 | 2 | 3204 | 56.9 | High Risk | 0.0 | 99.6 | 0.0 | 0.0 | 84.7 | 3867 | 102 | 0 | 2621 | 286 | 2 | 571 |
| DGS | 128 | 21 | 58019 | 97.4 | Low Risk | 93.0 | 99.1 | 92.4 | 95.8 | 99.2 | 1708 | 96 | 0 | 727 | 20 | 36 | 424 |
| DGS | 128 | 10 | 18383 | 69.9 | Medium Risk | 53.1 | 96.0 | 45.8 | 5.5 | 96.6 | 14484 | 101 | 0 | 12130 | 128 | 32 | 946 |
| DGS | 128 | 79 | 212642 | 88.2 | Mild Risk | 84.1 | 99.2 | 83.5 | 62.4 | 95.3 | 48078 | 930 | 3 | 40816 | 38 | 126 | 3085 |
| DHA | 74 | 24 | 59594 | 98.0 | Low Risk | 96.1 | 98.9 | 93.9 | 98.7 | 96.9 | 1408 | 421 | 0 | 171 | 14 | 66 | 419 |
| DHA | 74 | 1 | 2554 | 67.1 | Medium Risk | 20.5 | 98.8 | 68.7 | 67.2 | 24.2 | 710 | 133 | 0 | 291 | 203 | 3 | 80 |
| DHA | 74 | 18 | 51241 | 91.6 | Mild Risk | 79.8 | 96.9 | 92.6 | 80.1 | 93.1 | 5962 | 377 | 0 | 4525 | 35 | 38 | 386 |

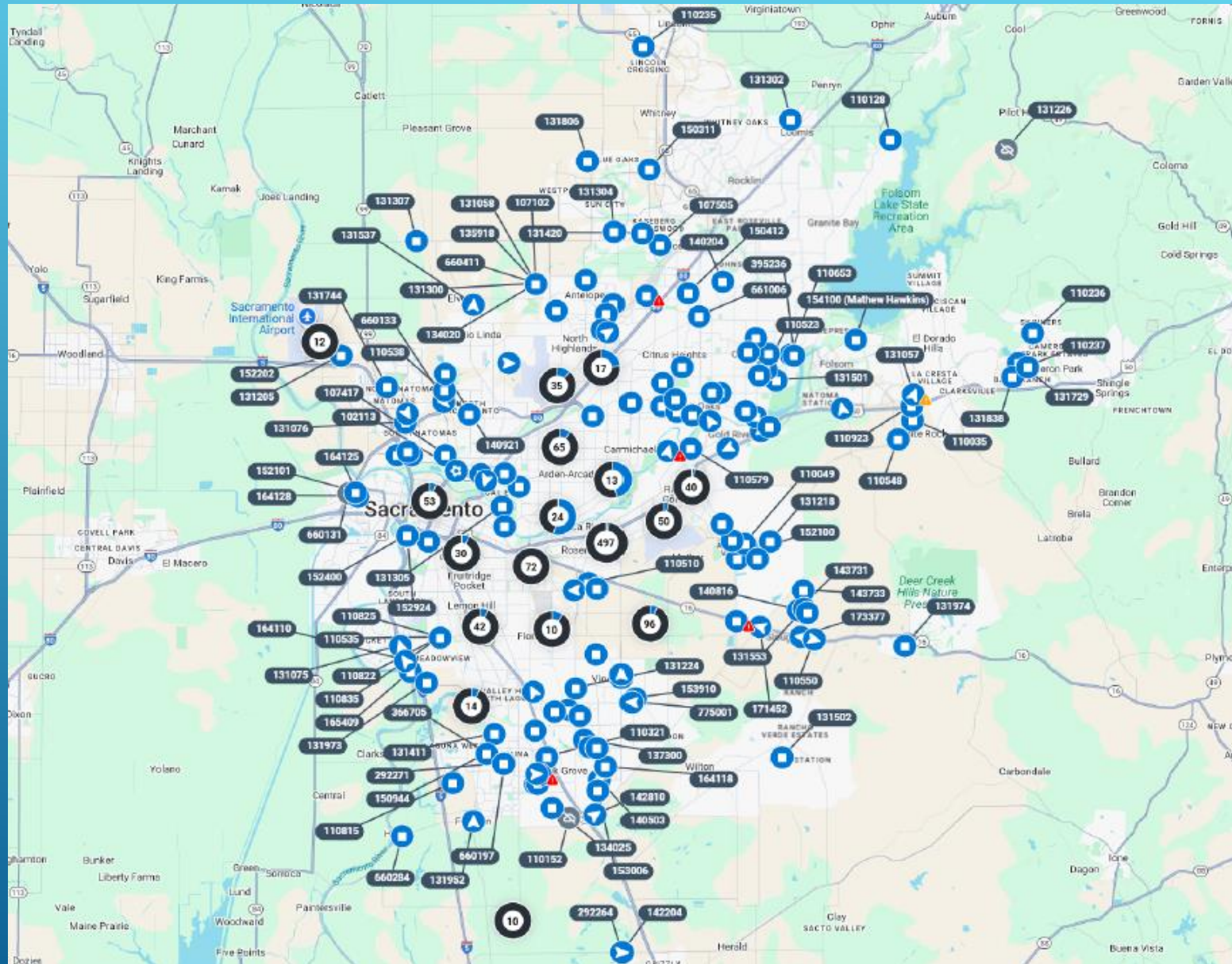
PARKING LOCATION MAP

UNIT COUNT by PARKING LOCATION FULL and DEPT NAME

DEPT NAME ● AG COMM ● ANIMAL CTRL ● ASSESSOR ● CABLE COMMISSION ● CORONER ● DA ● DCFAS ● DCS ● DCSS ● DGS ● DHA ● DHS ● DOT ● DTECH ● DWMR ● EMO ● FINANCE ● OES ● P&R ● PD ● PROB ● SSD ● VOTER REG ● WR



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% |

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

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 TYF |
| 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.

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 included in Passenger Car and Light Truck / Van Data. Not included in | | | | 164,715 | | | | | | | |
| | | Hybrids | M5 Unleaded Under 10K | 147,880 | | | 6,019,349 | Hybrid data in green, is included in Passenger Car and Light Truck Van Data. | | | |
| | | 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 | DWMM Clean Energy | 1,894 | | | N/A | CNG VMT captured in RNG Total VMT Below. |
| | | DWMM 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 |
| | | DWMM | 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 REPORTS USING POWER BI

- Data Sources:
 - Fleet Management Information System (FMIS)
 - GPS / Telematics
 - Fuel Transactions
 - Microsoft Applications: Access, SharePoint, Excel
- Leverage data from multiple sources to produce custom reports:
 - Safety Scorecard
 - Unit Data
 - Utilization
 - Vehicle Miles Traveled (VMT)
 - Vehicle Replacement Forecasting
 - Accident / Vandalism Reports
 - Parking Location
 - Product / Fuel Reports
 - Parts inventory
- All above reporting is highly customizable by: Department, Vehicle Type, Fuel Type, Weight Class, etc.
- Indispensable data when planning for electric vehicle charging infrastructure.

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



2383

UNIT COUNT

5.07

Average of AGE

61

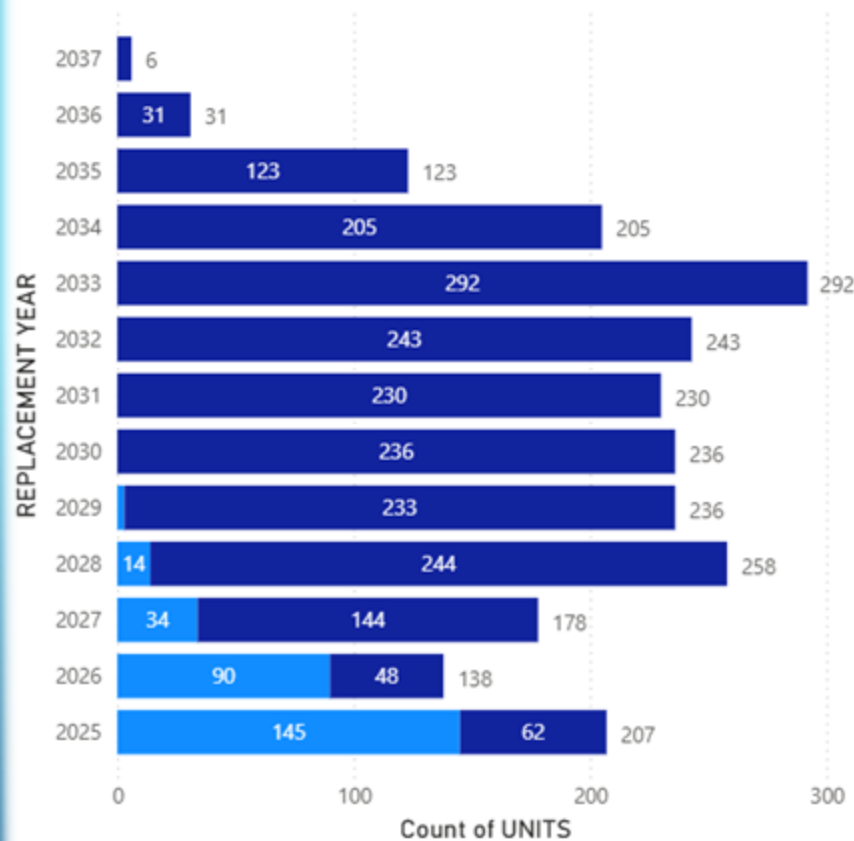
Average of MONTHS IN SERVICE

7.93%

INFLATION FACT

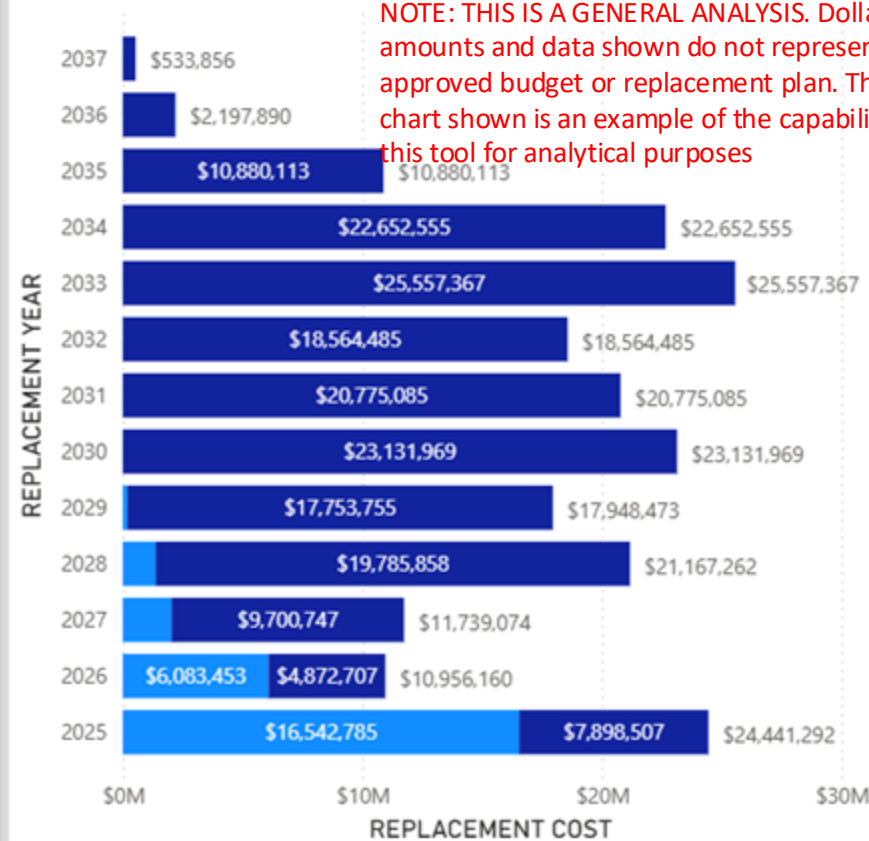
REPLACEMENT COUNT by REPLACEMENT YEAR

BUDGET CHECK ● BUDGETED ● NOT ON REPLACEMENT LIST



REPLACEMENT COST by REPLACEMENT YEAR

BUDGET CHECK ● BUDGETED ● NOT ON REPLACEMENT LIST



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

GWWR

750 140000

REPLACE DATE CHECK

 GOOD
 REPLACE BY DATE

REPLACEMENT YE...

 2025
 2026
 2027
 2028
 2029
 2030
 2031
 2032

REPLACEMENT ...

7/1/1994

11/8/2038

REPLACE BY MILES

 GOOD
 REPLACE BY MILE

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_RepDate | REPLACEMENT_COST_SWITCH | REP_DT_OVER/UN DER | REP_USAGE_OVER/UND ER | 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 | 11/25/2026 | |
| 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 | 11/25/2034 | |
| 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 | 12/9/2024 | |
| 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 | 4/29/2025 | |
| 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 | 11/25/2025 | |
| 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 | 3/14/2017 | |
| 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 | 3/17/2017 | |
| 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 | 3/15/2017 | |
| 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 | 3/15/2017 | |
| 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 | 11/1/2017 | |
| 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 | 6/18/2018 | |
| 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 | 5/24/2018 | |
| 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 | 8/29/2018 | |
| 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 | 8/9/2018 | |
| 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 | 10/25/2019 | |
| 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 | 8/12/2019 | |
| Active unit | 107916 | 2019 | CHEVROLET | COLORADO | DOT | 10/24/2019 | 73 | 10/24/2031 | 12 | 120000 | 46638 | 6024 | 2100 | 611 | \$38,415 | \$50,645 | \$50,645 | 5 | 75362 | 11/25/2035 | 10/24/2019 | |
| Total | | | | | | | 148145 | | | | | 41075553 | 1817474 | 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 | REPLACI 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 | 7/1/21 | | | |
| 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 | 8/21/21 | | | |
| Active unit | BU720234-D | DHS | DHS-CONSR 7202900340 | 102 | 102324 | 2013 | TOYOTA | PRIUS C | CAR-CMPT-4DR, HYBRD, GUSE-NRML PM | 44813 | 147 | 120000 | 1373 | 635 | 305 | 21 | 12.00 | 12 | 8/15/21 | | | |
| Flagged for disposal | BU720234-D | DHS | DHS-CONSR 7202900340 | 102 | 102327 | 2013 | TOYOTA | PRIUS C | CAR-CMPT-4DR, HYBRD, GUSE-NRML PM | 50757 | 147 | 120000 | 1586 | 679 | 345 | 17 | 12.00 | 12 | 8/15/21 | | | |
| 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 | 8/15/21 | | | |
| 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 | 5/26/21 | | | |
| 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 | 9/5/21 | | | |
| 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 | 2/10/21 | | | |
| 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 | 11/14/21 | | | |
| 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 | 9/5/21 | | | |
| 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 | 9/5/21 | | | |

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



452

UNIT COUNT

9.47

Average of AGE

104

Average of MONTHS IN SERVICE

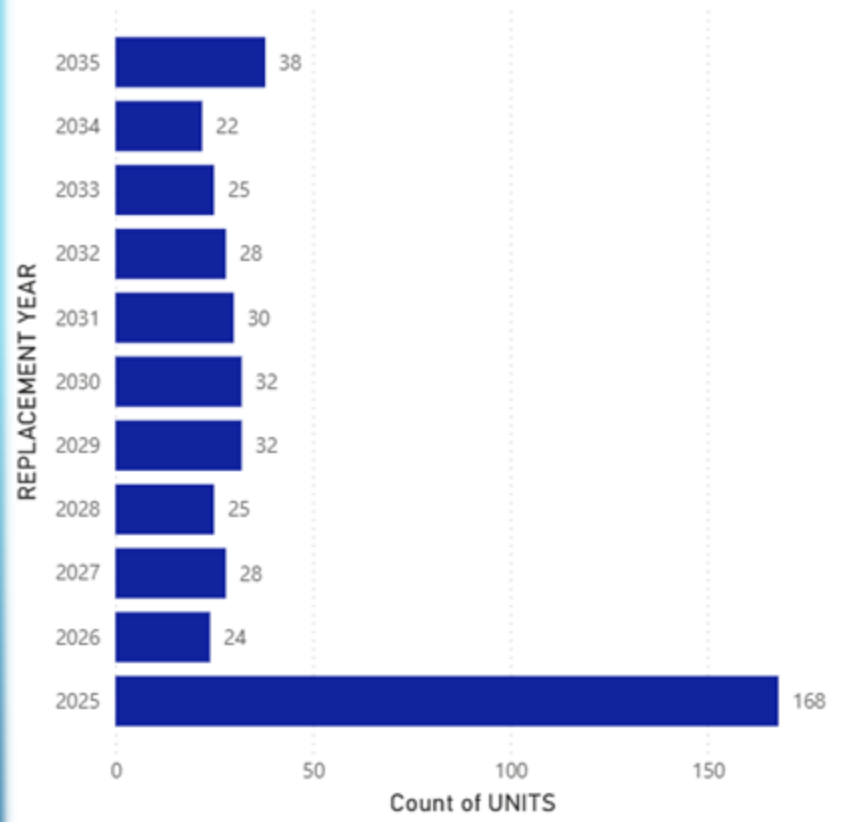
8.00%

INFLATION FACT

| 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 |

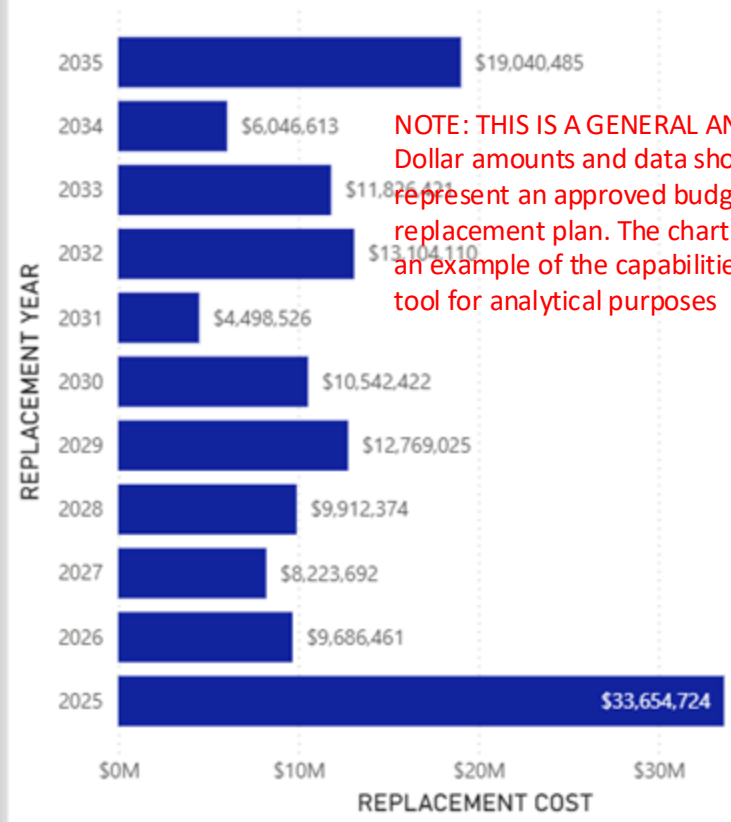
REPLACEMENT COUNT by REPLACEMENT YEAR

BUDGET CHECK ● NOT ON REPLACEMENT LIST



REPLACEMENT COST by REPLACEMENT YEAR

BUDGET CHECK ● NOT ON REPLACEMENT LIST

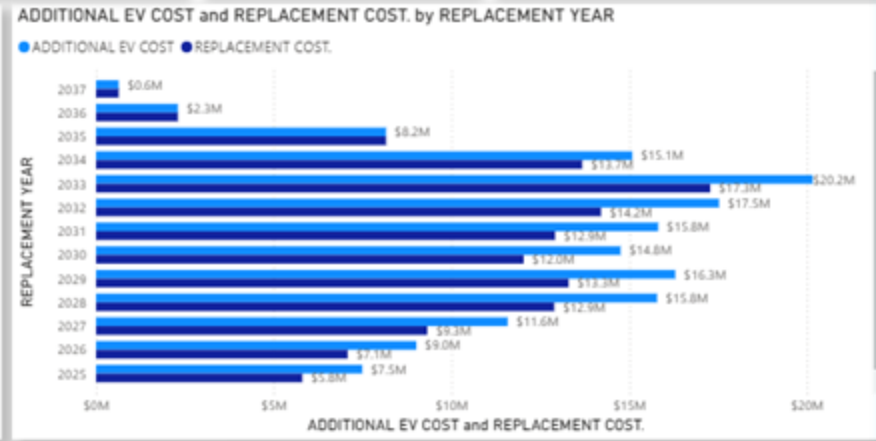


NOTE: THIS IS A GENERAL ANALYSIS. Dollar amounts and data shown do not represent an approved budget or replacement plan. The chart shown is an example of the capabilities of this tool for analytical purposes

EV TRANSITION FORECAST – LIGHT EQUIPMENT

| | | | | | |
|---------------------------|------------------------------------|--|-----------------------------------|---|--|
| 2029 Unit Count | 7.93% Avg INFLATION RATE | 30% Average of VAR_EV_MARKUP | \$130M REPLACEMENT COST | \$25M Sum of ADDITIONAL EV COST | \$155M 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 |
| 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 | | \$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 Min of GVWR 140000 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

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.

| YEAR | Vehicle Type | Quantity | Average VMT | Total VMT in Class | Average Miles per Kw | KiloWatts | Total Average Kw per Year | 246 | 1.20 | 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) |
|------|-----------------|----------|-------------|--------------------|----------------------|-----------|---------------------------|--------------------------------------|---|--------------------------------------|-----------------------------------|---|------------------|------------------|--|
| | | | | | | | | Average Kw Demand per Work Day (246) | Peak Kw Demand per Work Day (Adds Factor shown) | | | | | | |
| 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 | | | | | | | | | |
| 2028 | Passenger Sedan | 6 | 5,158 | 30,948 | 3.4 | 9,102 | 49,319 | 200.49 | 240.58 | 695.73 | 47 | Start budgeting and planning for 2030/2031. | 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 | 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. | 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 | | | | | | | | | |
| 2031 | Passenger Sedan | 4 | 5,158 | 20,632 | 3.4 | 6,068 | 121,693 | 494.69 | 593.62 | 2580.83 | 122 | Start budgeting and planning for 2032. | 40 | 8 | 1,600 amps @ 208VAC 3 Ph. for (40) Level 2, 400 amps @ 480VAC 3 Ph. for (8) Level 3 (DCFC). |
| | 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 | | | | | | | | | |
| 2034 | Passenger Sedan | 4 | 5,158 | 20,632 | 3.4 | 6,068 | 111,638 | 453.81 | 544.58 | 3923.04 | 190 | Start budgeting and planning for 2035. | 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 (DCFC). |
| | Pickup Truck | 8 | 10,557 | 84,456 | 2.1 | 40,217 | | | | | | | | | |

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

NOTE: All circuit recommendations 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. In reality, most chargers have charge management software to manage rate of charge and optimize the available electrical capacity. There are complete systems 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.

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 | 246 | 1.20 | 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) |
|--|---------------------|--------------------|--------------------|--------------------|---------------------------|----------------------|-------------------|---|--|--------------------------------------|-----------------------------------|--|------------------------------------|------------------|------------------|---|
| | | | | | | | | Average Kw Demand per Work Day (246 Factor shown) | Peak Kw Demand per Work Day (Multiples Factor shown) | | | | | | | |
| 2026 | Automobile Class 1 | 1 | 0 | 4,882 | 0 | 3.4 | 0 | 0.00 | 0.00 | | | Some Class 3 – 7 ordered prior to CARB ACF | This may be a good starting point. | 5 | 1 | Level 2: (4) L2 Ports support 6 pickups (1) L2 Port for Rikon at parking location (1) DCFC front for Opportunity charging 200 amps @ 208VAC 3 Ph. for (5) Level 2, 50 amps @ 480VAC 3 Ph. for (1) Level 3 (DCFC). |
| | Pickup Truck 2 - 2b | 3 | 6 | 6,900 | 41,400 | 2.1 | 19,714 | 80.14 | 96.17 | | | 2025 EV purchases to arrive in 2026 are represented. | | | | |
| | Cab / Chassis 3-5 | 15 | 1 | 9,014 | 9,014 | 0.8 | 11,268 | 45.80 | 54.96 | | | Replace (3) 3-5 Class with Class 2b PU | | | | |
| | Cab / Chassis 6-7 | 7 | 0 | 4,298 | 0 | 0.5 | 0 | 0.00 | 0.00 | | | Replace (1) 162 with Rizon | | | | |
| | Class 8 | 0 | 0 | 2,581 | 0 | 0.5 | 0 | 0.00 | 0.00 | | | | | | | |
| | TOTALS | 26 | 7 | | | | 30,982 | 125.94 | 151.13 | 7.00 | | | | | | |
| 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 | This may be a good starting point. | 8 | 4 | Add: (2) L2 Ports (3) DCFC in rear lot (2) Dump Truck, (1) Sweeper 320 amps @ 208VAC 3 Ph. for (8) Level 2, 200 amps @ 480VAC 3 Ph. for (4) Level 3 (DCFC). |
| | Pickup Truck 2 - 2b | 4 | 2 | 6,900 | 13,800 | 2.1 | 6,571 | 26.71 | 32.06 | | | If Class 3-5 don't work as PU - Replace 132 PU with 131 EV PU | | | | |
| | 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 | | | | |
| | Cab / Chassis 6-7 | 1 | 1 | 4,298 | 4,298 | 0.5 | 8,596 | 34.94 | 41.93 | | | Elgin Broom Bear - Budgeted for EV | | | | |
| | Class 8 | 4 | 2 | 2,581 | 5,162 | 0.5 | 10,324 | 41.97 | 50.36 | | | (2) 176 Dumps - Budgeted for EV | | | | |
| | TOTALS | 18 | 11 | | | | 34,107 | 138.65 | 166.37 | 317.50 | 18.00 | | | | | |
| 2028 | Automobile Class 1 | 1 | 1 | 4,882 | 4,882 | 3.4 | 1,436 | 5.84 | 7.00 | | | (1) Passenger deferred from 2026 | This may be a good starting point. | 12 | 6 | Add: (4) L2 Ports (2) DCFC at added vehicle parking location 480 amps @ 208VAC 3 Ph. for (12) Level 2, 300 amps @ 480VAC 3 Ph. for (6) Level 3 (DCFC). |
| | Pickup Truck 2 - 2b | 0 | 2 | 6,900 | 13,800 | 2.1 | 6,571 | 26.71 | 32.06 | | | | | | | |
| | Cab / Chassis 3-5 | 6 | 4 | 9,014 | 36,056 | 0.8 | 45,070 | 183.21 | 219.85 | | | | | | | |
| | Cab / Chassis 6-7 | 1 | 0 | 4,298 | 0 | 0.5 | 0 | 0.00 | 0.00 | | | | | | | |
| | Class 8 | 1 | 1 | 2,581 | 2,581 | 0.5 | 5,162 | 20.98 | 25.18 | | | | | | | |
| | TOTALS | 9 | 8 | | | | 58,239 | 236.75 | 284.09 | 601.60 | 26.00 | | | | | |
| 2029 | Automobile Class 1 | 0 | 0 | 4,882 | 0 | 3.4 | 0 | 0.00 | 0.00 | | | | This may be a good starting point. | 12 | 8 | Add: (2) DCFC at parking locations for new Class 6-7 480 amps @ 208VAC 3 Ph. for (12) Level 2, 800 amps @ 480VAC 3 Ph. for (8) Level 3 (DCFC). |
| | 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 | | | | |
| | Cab / Chassis 6-7 | 6 | 2 | 4,298 | 8,596 | 0.5 | 17,192 | 69.89 | 83.86 | | | Some offsets are in 2028 purchases | | | | |
| | Class 8 | | | 2,581 | 0 | 0.5 | 0 | 0.00 | 0.00 | | | Defer 178-103 and 104 - Condition. Open Discussion. | | | | |
| | TOTALS | 13 | 6 | | | | 54,280 | 220.65 | 264.78 | 866.38 | 32.00 | | | | | |
| 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 must be EV | This may be a good starting point. | 20 | 16 | Add: (8) L2 ports for 15 new Class 2 through 5 (8) DCFC at parking locations for 8 new Class 6-7. 800 amps @ 208VAC 3 Ph. for (20) Level 2, 800 amps @ 480VAC 3 Ph. for (16) Level 3 (DCFC). |
| | 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. | | | | |
| | Cab / Chassis 3-5 | 7 | 7 | 9,014 | 63,098 | 0.8 | 78,873 | 320.62 | 384.74 | | | Discuss accelerating replacement to 2029? | | | | |
| | 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. | | | | |
| | Class 8 | 0 | 0 | 2,581 | 0 | 0.5 | 0 | 0.00 | 0.00 | | | | | | | |
| | TOTALS | 24 | 24 | | | | 175,362 | 712.85 | 855.42 | 1721.81 | 58.00 | (42) Class 1 thru 5, (14) Class 6 thru 8 | | | | |

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 TRANSITION FORECAST – HEAVY EQUIPMENT

117

Unit Count

8.00%

Avg INFLATION RATE

80%

Average of VAR_EV_MARKUP

\$43M

REPLACEMENT COST

\$23M

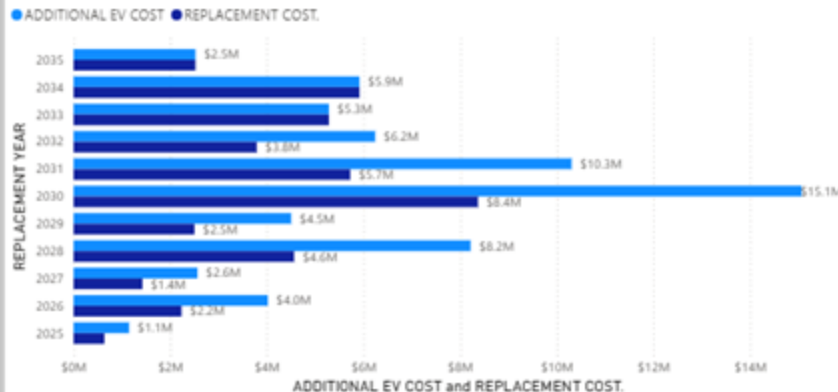
Sum of ADDITIONAL EV COST

\$66M

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 |

ADDITIONAL EV COST and REPLACEMENT COST. by REPLACEMENT YEAR



| 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 Min of GVWR
66000 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

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.



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.



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



Estimate to Convert to EV:

| | | |
|----------------------|-------------------------------------|--------------------|
| Chassis Cost 40% = | \$160,370 X 300% (Convert to EV) | = \$481,108 |
| Body and Upfit 60% = | \$240,554 Equivalent Body and Upfit | = \$240,554 |
| | | = \$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**

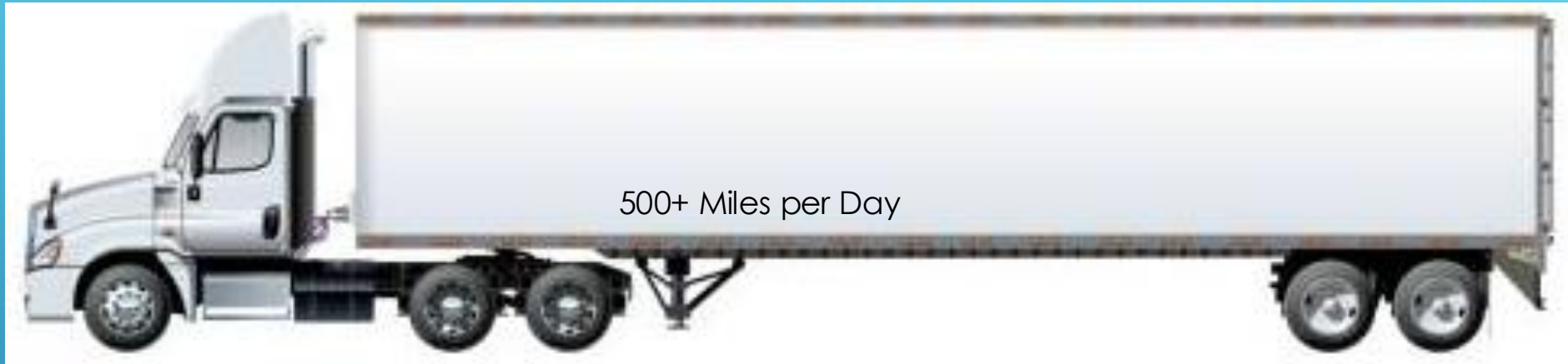
Advertised Range – 312 Miles

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

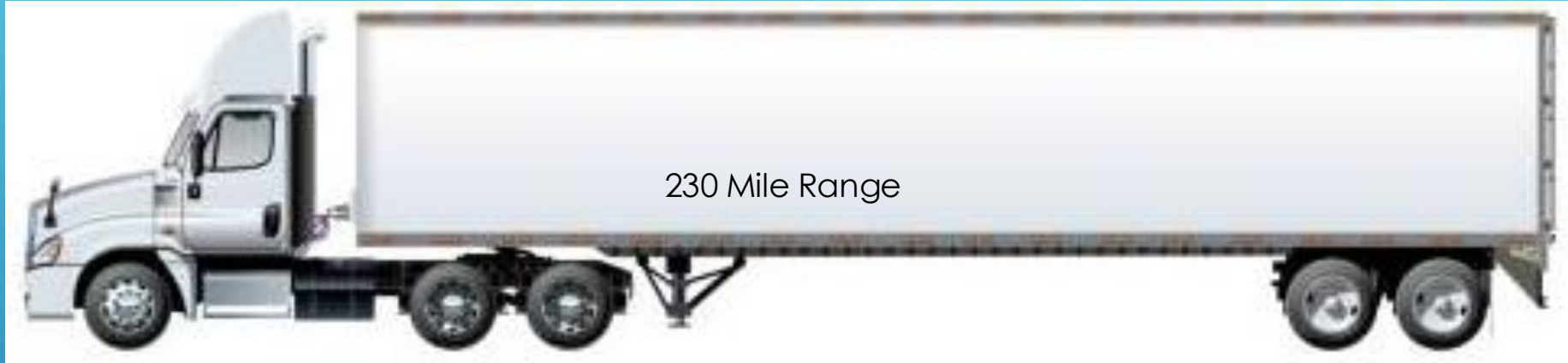
Fuel Capacity – 200 gallons @ \$6.00 per gallon = \$1,200

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

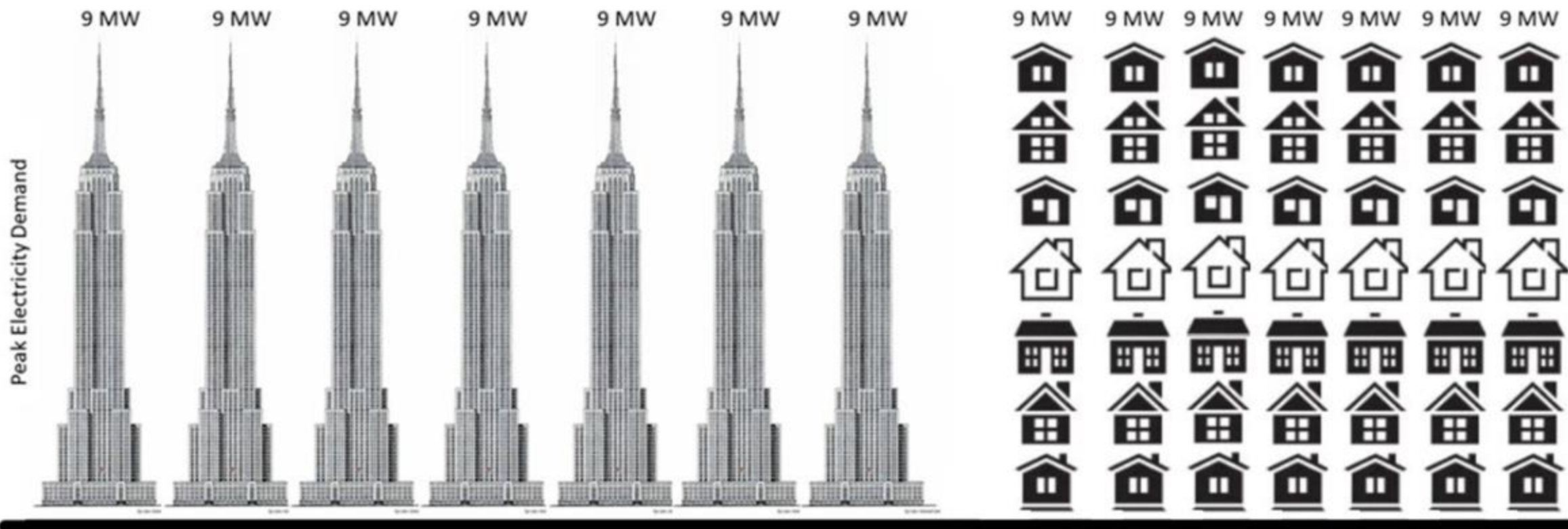
Electric Range – 230 miles

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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A decorative graphic consisting of several parallel white lines of varying lengths, slanted diagonally from the bottom right towards the top right, set against the blue background.