

Essential & Critical Fleet Management Positions Every Fleet Should Have



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Topics

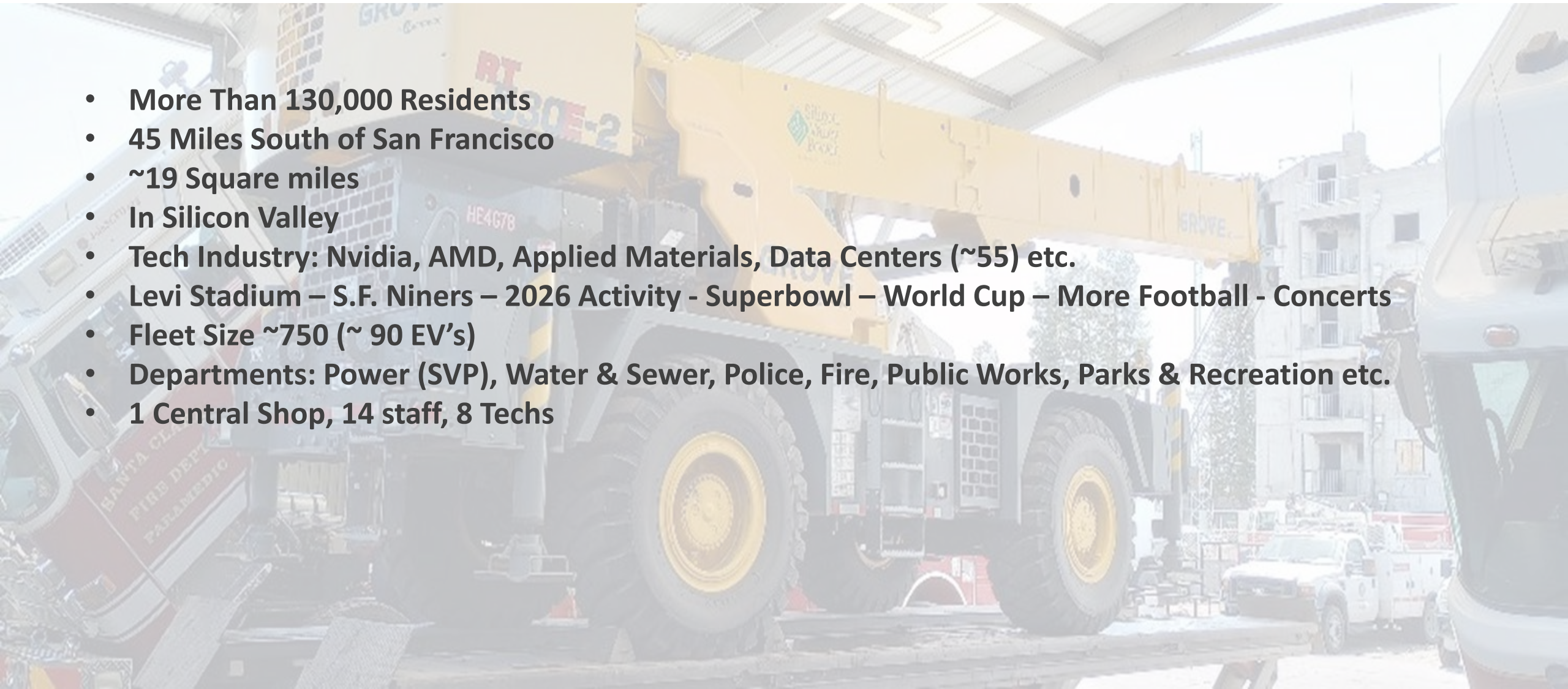
- What Does the Future of Fleet Management Look Like
- Current Organizational Chart vs Future Needs
- Calculating Mechanic/Technician Staffing Needs
 - Various Formulas and Examples
- Administrative Staffing Needs
- Regulatory Compliance Workload Growth
- How to Build Your Case for Increasing Staffing
- Resources
- Questions and Answers





City of Santa Clara

- **More Than 130,000 Residents**
- **45 Miles South of San Francisco**
- **~19 Square miles**
- **In Silicon Valley**
- **Tech Industry: Nvidia, AMD, Applied Materials, Data Centers (~55) etc.**
- **Levi Stadium – S.F. Niners – 2026 Activity - Superbowl – World Cup – More Football - Concerts**
- **Fleet Size ~750 (~ 90 EV's)**
- **Departments: Power (SVP), Water & Sewer, Police, Fire, Public Works, Parks & Recreation etc.**
- **1 Central Shop, 14 staff, 8 Techs**



County of Santa Clara

Fleet Management Division

- **65 - Full-Time Staff Working Within 5 Facilities**
 - **2 - Owned Facilities**
 - **3 - Customer Owned Facilities**
 - **1 - Automotive Collision Repair Facility within County Correctional Facility**

Operational Area

- **1,291 Square Miles in Size**
- **32F to 109F - Climate Range**
- **Sea Level to 4,216 Feet - Elevation Range**
- **1,936,259 - Population in 2020**
 - **Most Populated County in Northern California**
 - **San Jose is the 10th Most Populous City in the United States**

County Fleet Composition

2,616 - Vehicles and Equipment

- **2,267 - Vehicles**
- **349 - Pieces of Equipment**

638 - External Customer Vehicles and Equipment

County Green Fleet Data

- **34% of All Vehicles**
- **46% of All Equipment**
- **28M+ - Vehicle Miles Traveled Since 1998**
 - **57 Round Trips to the Moon and Back**
- **1998 - First EVs in the Fleet**
 - **6 - Toyota RAV4 EVs**



What Does the Future of Fleet Management Look Like

- **Increasing Regulatory Compliance Workload**
 - Compliance and Administrative Work
- **Recruiting and Staff Retention Difficulties**
 - Mechanics, Technicians, and Data Analysis Staff
- **Budget Challenges – Doing More with Less or Doing Less with Less**
- **Increasing Public Records Requests Submitted by AI “Agents”**
- **An Increase in Vendors Directly Approaching Elected Officials and Executive Management with Solutions Based on AI Analysis**
- **Social Engineering Cyber Attacks Using AI**
- **Increased Vehicle and Equipment Specifications Development Workload**
 - 3½ Year Product Cycles
- **The Industry is Becoming More Complex with Increased Workloads**

What Does the Future of Fleet Management Look Like Cont...

Staffing, Fleet Size, Type, Services...

Fleet Type, Size & Staffing

- Do you have the right number of staff?
- Do you have the right type of staff – skills...?
- Should you add, remove or convert positions?
- Contractual or In-house?

Where are you now?

- Your Data
- Has there been Changes
 - Fleet and/or program additions
 - Staffing
 - Budgets

Calculating Mechanic/Technician Staffing Needs

- **Maintenance Repair Units (MRU)**

- Determine the labor needed for your current fleet. Vehicle labor hours are figured by dividing the total labor hours needed (TMC includes vendor hours in this calc., which seems an odd variable to include)
- Separately calculate the total vehicle hours needed for each type, make, vehicle class and model year of each piece of equipment and add the results
- Calculate the number of direct labor hours.
- Take the total number of labor needed (step 2) divided by the number of direct labor hours per day (step 3)

- **Technician to Vehicle Ratio**

- Total Number of Vehicles in Fleet Divided by the Number of Mechanics/Technicians
- Compare to Other Fleet Agencies Ratios in Your Regional Area

- **Vehicle Equivalent or Equivalency Unit (VEU) Formula**

- Examples on Following Slides

- **Other Solutions**

- Comparisons to Other Agencies
- Consultant Review
- Historical Back Log Hours

Vehicle Equivalent or Equivalency Unit (VEU) Formula

- **A Formula That Assigned Numerical Values to Vehicles and Equipment Types Based on a Baseline Number of “1” for Lower Maintenance Difficulty and Increase to a “10” for Higher Maintenance Difficulty**
- **Each VEU is Assigned a Total Number of Hours to Perform Maintenance Tasks**
- **The Total Number of VEUs is Multiplied by the Number of Hours to Complete Maintenance Tasks**
- **The Total Number of Hours for Each VEU Class is Divided by the Estimated or Actual Mechanic/Technician Productivity Hours**
- **Compare the Calculated Results to Your Actual Staffing Count**



VEU'S

NAFA – Fleet Maintenance Staffing Guide

“... 1,415 hours of potential wrench turning time. If you are getting 80% of that in actual production from the average technician then you are fairly typical.

...Actual production approaching 100% is better...”

APWA – Managing Public Equipment

“...the average technician bills out approximately 1,560 hours of 2,080 hours...”

VEU Formula Spreadsheet Example

Vehicle Equivalent Unit (VEU) Calculation

Light Equipment

QTY	Equipment Type	VEU Multiplier	VEU's	10 Hours of Work per VEU	13 Hours of Work per VEU	15 Hours of Work per VEU	# of VEU's per Single Techncian Based on a 10 Hours of Work per VEU	# of VEU's per Single Techncian Based on a 13 Hours of Work per VEU	# of VEU's per Single Techncian Based on a 15 Hours of Work per VEU	Total Number of Technicians Needed- Based on 10 Hours of Work per VEU	Total Number of Technicians Needed- Based on 13 Hours of Work per VEU	Total Number of Technicians Needed- Based on 15 Hours of Work per VEU
336	Light Duty Trucks	1.5	504	5040	6552	7560	145.0	112.0	97.0	3.5	4.5	5.2
120	Patrol Vehicles	2.5	300	3000	3900	4500	145.0	112.0	97.0	2.1	2.7	3.1
320	Sedans	1	320	3200	4160	4800	145.0	112.0	97.0	2.2	2.9	3.3
117	SUV	1.5	175.5	1755	2281.5	2632.5	145.0	112.0	97.0	1.2	1.6	1.8
106	Van	1.5	159	1590	2067	2385	145.0	112.0	97.0	1.1	1.4	1.6
999	Total	Totals	1,458.50	14,585.00	18,960.50	21,877.50	Total Staff Needed			10.1	13.0	15.0
Additional Staffing Needs Due to Field Service Drive Times *										0.4	0.4	0.4
Current Technician Staffing Number										6.0	6.0	6.0
Delta										-4.5	-7.4	-9.4

* 639 – Average number of hours dedicated driving to and from field service repair locations per year, which is not part of the industry standard VEUs formulas.

1,456 – Industry standard of Mechanic/Technician Productivity. 1,456 billable hours based on 70% of 2,080 payroll hours.

VEU Formula Example

Heavy Equipment

QTY	Equipment Type	VEU Multiplier	VEU's	10 Hours of Work per VEU	13 Hours of Work per VEU	15 Hours of Work per VEU	# of VEU's per Single Technician Based on a 10 Hours of Work per VEU	# of VEU's per Single Technician Based on a 13 Hours of Work per VEU	# of VEU's per Single Technician Based on a 15 Hours of Work per VEU	Total Number of Technicians Needed- Based on 10 Hours of Work per VEU	Total Number of Technicians Needed- Based on 13 Hours of Work per VEU	Total Number of Technicians Needed- Based on 15 Hours of Work per VEU
13	Aerial/Bucket Trucks	10	130	1300	1690	1950	145.0	112.0	97.0	0.9	1.2	1.3
16	Backhoe	5	80	800	1040	1200	145.0	112.0	97.0	0.6	0.7	0.8
1	Buses	5	5	50	65	75	145.0	112.0	97.0	0.0	0.0	0.1
2	Class 8 Trucks	5	10	100	130	150	145.0	112.0	97.0	0.1	0.1	0.1
8	Fire Truck	10	80	800	1040	1200	145.0	112.0	97.0	0.6	0.7	0.8
14	Forklifts	5	70	700	910	1050	145.0	112.0	97.0	0.5	0.6	0.7
50	Heavy Duty Trucks	5	250	2500	3250	3750	145.0	112.0	97.0	1.7	2.2	2.6
22	Loaders/Tractor/Gradall	5	110	1100	1430	1650	145.0	112.0	97.0	0.8	1.0	1.1
27	Medium Duty Trucks	3	81	810	1053	1215	145.0	112.0	97.0	0.6	0.7	0.8
5	Motor Graders	5	25	250	325	375	145.0	112.0	97.0	0.2	0.2	0.3
25	Mowers	1	25	250	325	375	145.0	112.0	97.0	0.2	0.2	0.3
15	Rollers/Packers	5	75	750	975	1125	145.0	112.0	97.0	0.5	0.7	0.8
117	Small Engine Equipment	0.5	58.5	585	760.5	877.5	145.0	112.0	97.0	0.4	0.5	0.6
17	Small Tractors	1.4	23.8	238	309.4	357	145.0	112.0	97.0	0.2	0.2	0.2
5	Street Sweepers	14	70	700	910	1050	145.0	112.0	97.0	0.5	0.6	0.7
183	Trailers	1	183	1830	2379	2745	145.0	112.0	97.0	1.3	1.6	1.9
0	Transit Buses	5	0	0	0	0	145.0	112.0	97.0	0.0	0.0	0.0
8	Wood Chipper	5	40	400	520	600	145.0	112.0	97.0	0.3	0.4	0.4
528	Total	Totals	1,316.30	13,163.00	17,111.90	19,744.50	Totals			9.1	11.8	13.6
Additional Staffing Need for Patrol Vehicle Set-Ups **										0.6	0.6	0.6
Current Technician Staffing Number										8.0	8.0	8.0
Delta										-1.7	-4.4	-6.2

**** 928 – Average number of hours dedicated setting up patrol vehicles which is not included in industry standards.**

VEUs and Fleet Management Information System Software



Standard			About Printing
Accounting			 
W502 - Billing By Department	W503 - Billing With Accounts	W504 - Billing Summary By Accounts	
W505 - Billing Summary By Department	W512 - Billing Documents	W515 - Account And Detail Spending	
W516 - Payables And Invoices By Vendor	W517 - Purchase Orders By Vendor	W522 - Billing Information	
W523 - Billing Omissions	W524 - Billing Adjustments	W532 - Manage Billing Account Setup Information	
W534 - Custom Spec Accounts	W598 - Potential Billing Account Setup Issues		
Assets			 
W100 - Asset Print Report	W101 - Asset Record Printout	W102 - Preventative Maintenance Listing	
W103 - Scheduled Maintenance Due Report	W104 - Asset Meter Report	W105 - Asset List with Cost Info	
W105s - Asset List with Cost Info Summary	W106 - Asset Contact Report	W107 - Average Age-Cost per Meter Comparison	
W108 - Asset Advanced Search	W109 - Asset Replacement	W110 - Asset Billing Details Setup	
W113 - Asset Utilization	W113s - Asset Utilization Summary	W114 - Asset Master List	
W117 - Asset Auction Report	W118 - Asset Disposal Report	W120 - Standard Mileage Report	
W122 - PM and SA Completion Information	W124 - Cost Per Meter Summary Report	W125 - Asset Cost Exception Report	
W128 - Straight Line Depreciation	W129 - Remaining Recovery Balance	W130 - Meter Exception Report	
W131 - Assets Without PM Information	W134 - Asset Warranty Report	W135 - Asset Inventory Snapshot	
W136 - Meter End Of Life Projection	W140 - Asset Custom Specification	W150 - Asset History Report	
W150s - Asset History Summary	W151s - Asset History Summary with Multiple Meter Option	W155 - Reassign Asset History Report	
 W156 - Vehicle Equivalency Report	W161 - Asset Purge Report		

VEUs and Fleet Management Information System Software

Fleet Database Tool – Example Faster NAFA Fleet Maintenance & Staffing Guide



Dropdown Order:	Code	Time Zone: *	Pacific Standard Time	View Report
VEU Execution Date Time: *	X <Select a Value>	Vehicle Equivalency Class Code: *		
Annual Hours For Technician (Enter As Whole Number):	X 2080	Productivity Percentage: (100 = 100% and 70 = 70%)	X 100	

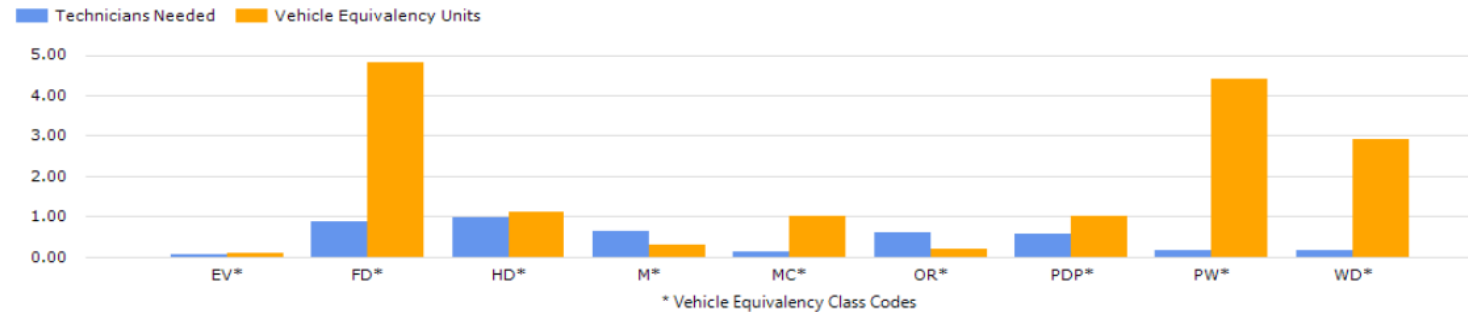
VEUs and Fleet Management Information System Software

VEHICLE EQUIVALENCY REPORT

Labor Hours in this report include labor hours from Maintenance And Repair.

Annual Hours Per Technician = 2080. 

Productivity Percentage = 100%. 



VEHICLE EQUIVALENCY CLASS	VEHICLE EQUIVALENCY CLASS DESCRIPTION	NUMBER OF ASSETS	BASELINE	AVG ANNUAL LABOR HOURS	VEHICLE EQUIVALENCY HOURS	VEHICLE EQUIVALENCY UNITS	AVERAGE AGE OF ASSETS	TECHNICIANS NEEDED
EV	Electric Vehicle	62		2.11	2.11	0.1	3.58	0.06
FD	Fire Apparatus	23		79.82	79.82	4.8	12.83	0.88
HD	Heavy Duty	109		18.68	18.68	1.1	9.25	0.98
M	Mid Size	265		5.13	5.13	0.3	8.42	0.65
MC	Motorcycle	15		17.01	17.01	1.0	8.75	0.12
OR	Off Road	327		3.85	3.85	0.2	14.50	0.61
PDP	PD Patrol	73	BASELINE	16.49	16.49	1.0	6.50	0.58
PW	Sweeper	5		71.76	71.76	4.4	6.00	0.17
WD	HD Sewer Truck	8		47.51	47.51	2.9	9.00	0.18

NUMBER OF ASSETS	AVG ANNUAL LABOR HOURS	TECHNICIANS NEEDED
887	262.36	 4.23

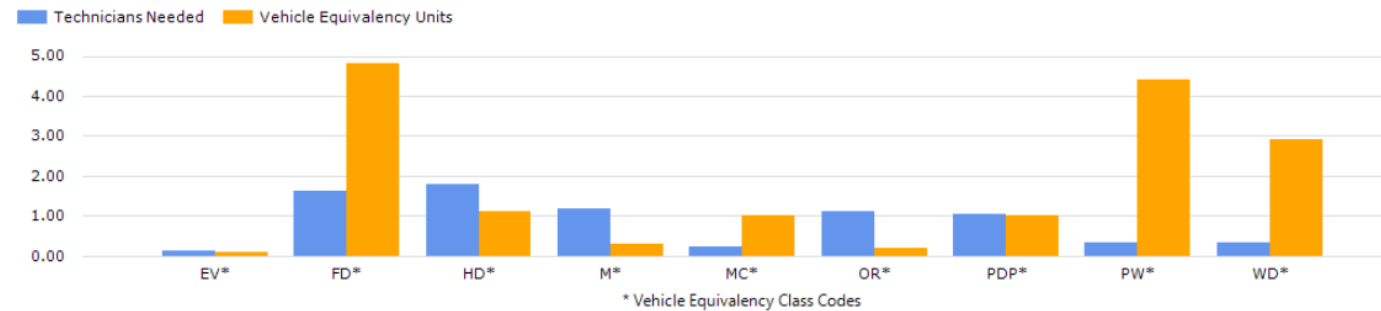
VEUs and Fleet Management Information System Software

VEHICLE EQUIVALENCY REPORT

Labor Hours in this report include labor hours from Maintenance And Repair.

Annual Hours Per Technician = 1415. 

Productivity Percentage = 80%. 



VEHICLE EQUIVALENCY CLASS	VEHICLE EQUIVALENCY CLASS DESCRIPTION	NUMBER OF ASSETS	BASELINE	AVG ANNUAL LABOR HOURS	VEHICLE EQUIVALENCY HOURS	VEHICLE EQUIVALENCY UNITS	AVERAGE AGE OF ASSETS	TECHNICIANS NEEDED
EV	Electric Vehicle	62		2.11	2.11	0.1	3.58	0.12
FD	Fire Apparatus	23		79.82	79.82	4.8	12.83	1.62
HD	Heavy Duty	109		18.68	18.68	1.1	9.25	1.80
M	Mid Size	265		5.13	5.13	0.3	8.42	1.20
MC	Motorcycle	15		17.01	17.01	1.0	8.75	0.23
OR	Off Road	327		3.85	3.85	0.2	14.50	1.11
PDP	PD Patrol	73	BASELINE	16.49	16.49	1.0	6.50	1.06
PW	Sweeper	5		71.76	71.76	4.4	6.00	0.32
WD	HD Sewer Truck	8		47.51	47.51	2.9	9.00	0.34

NUMBER OF ASSETS	AVG ANNUAL LABOR HOURS	TECHNICIANS NEEDED
887	262.36	 7.80

Administrative Staffing Needs

- **Expert International Fleet Consultant**
 - 5% of Mechanic/Technician Staff Numbers
- **Historical Overtime Trend**
- **Calculating Workload Capacity Needed When New Administrative Work and Tasks are Assigned to Fleet Operations**
- **Compare Outside Vendor Costs to Internal Costs to Perform the Same or Similar Work**

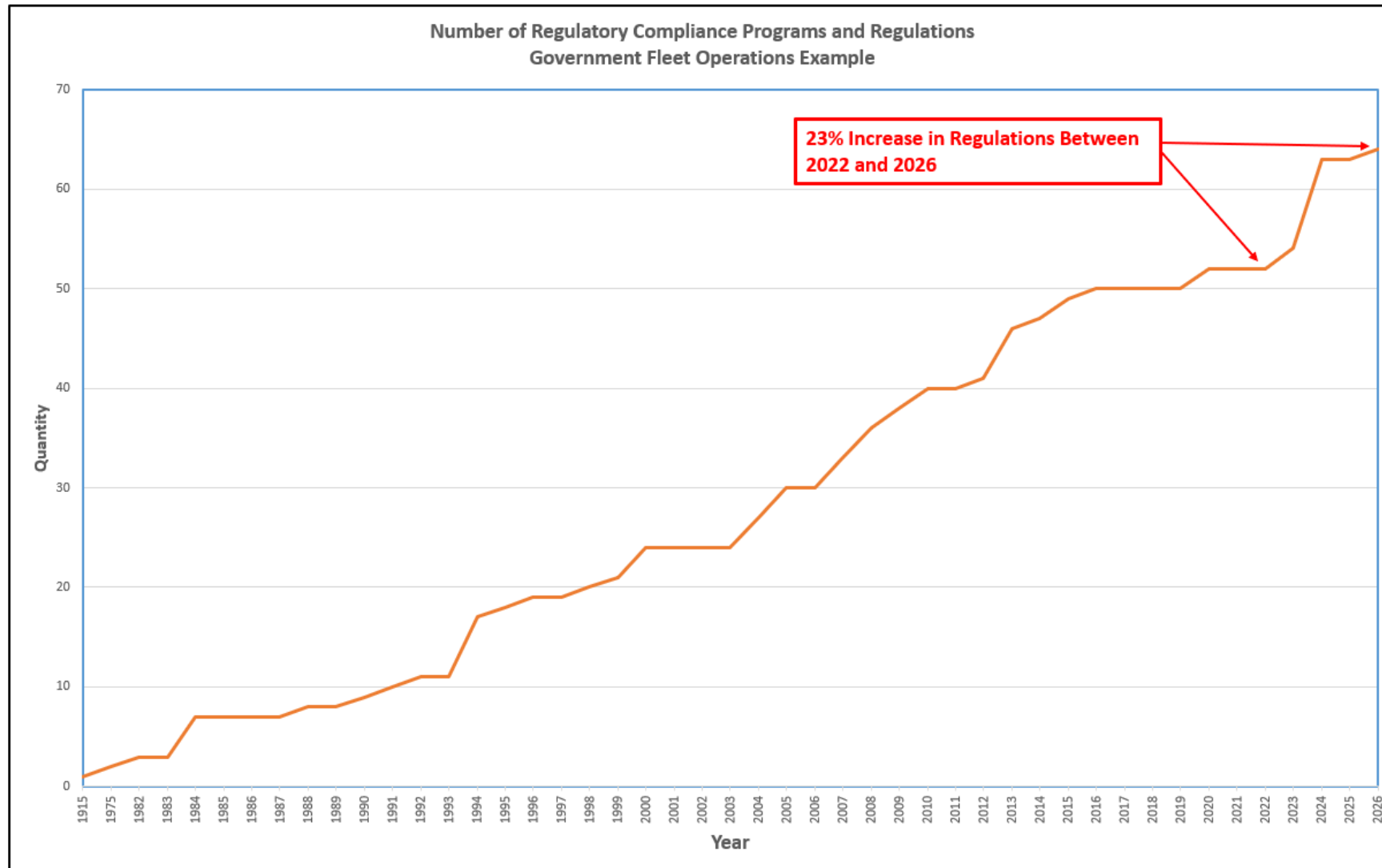
Regulatory Compliance Workload Growth

“It is the Largest Growth in Fleet Staffing Needs in California”

- **California Air Resources Board Regulations**
 - **Advanced Clean Trucks (ACT)**
 - **Advanced Clean Fleets (ACF)**
 - **Clean Truck Check (CTC)**
 - **Drive Forward Fleet**
 - **Light Duty Vehicles**
 - **Heavy Duty Vehicles**
 - **Zero Emissions Forklifts (ZEF)**



Regulatory Compliance Workload Cont...





How to Build Your Case for Increasing Staffing

- 
- A group of eight people, including men and women, standing in a garage or workshop. They are wearing various uniforms, some in blue shirts and others in darker clothing. In the background, there are vehicles, including a white van and a car with its hood open.
- Executive Management
 - Staffing Needs
 - Data & Performance Measures
 - Potential VEU Data Gaps
 - Fleet Availability
 - Backlog
 - Capital Work
 - Staff
 - Performance Appraisals
 - Direct labor
 - Job Efficiency



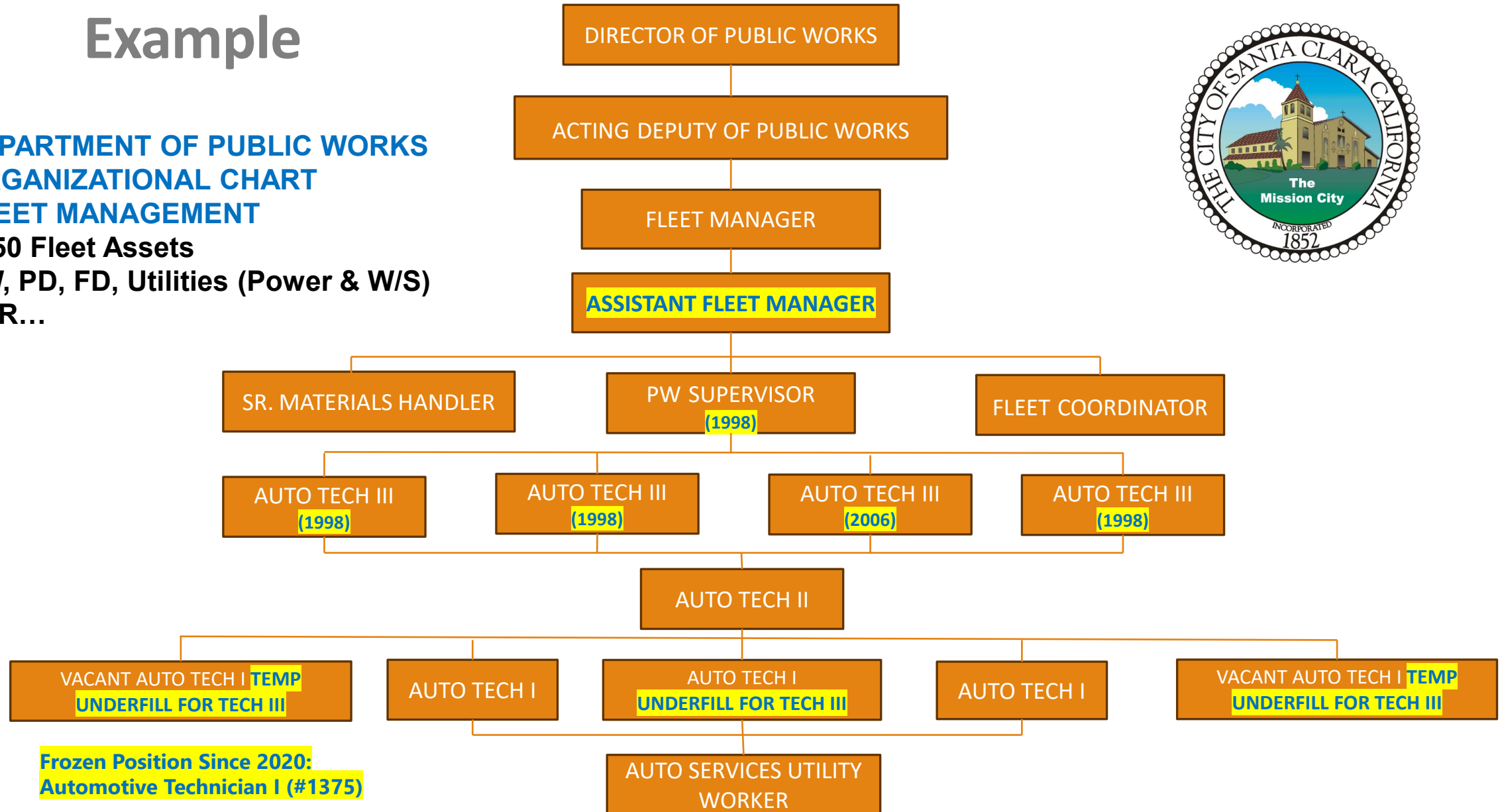
Example

DEPARTMENT OF PUBLIC WORKS ORGANIZATIONAL CHART FLEET MANAGEMENT

~750 Fleet Assets

PW, PD, FD, Utilities (Power & W/S)

P&R...



Frozen Position Since 2020:
Automotive Technician I (#1375)

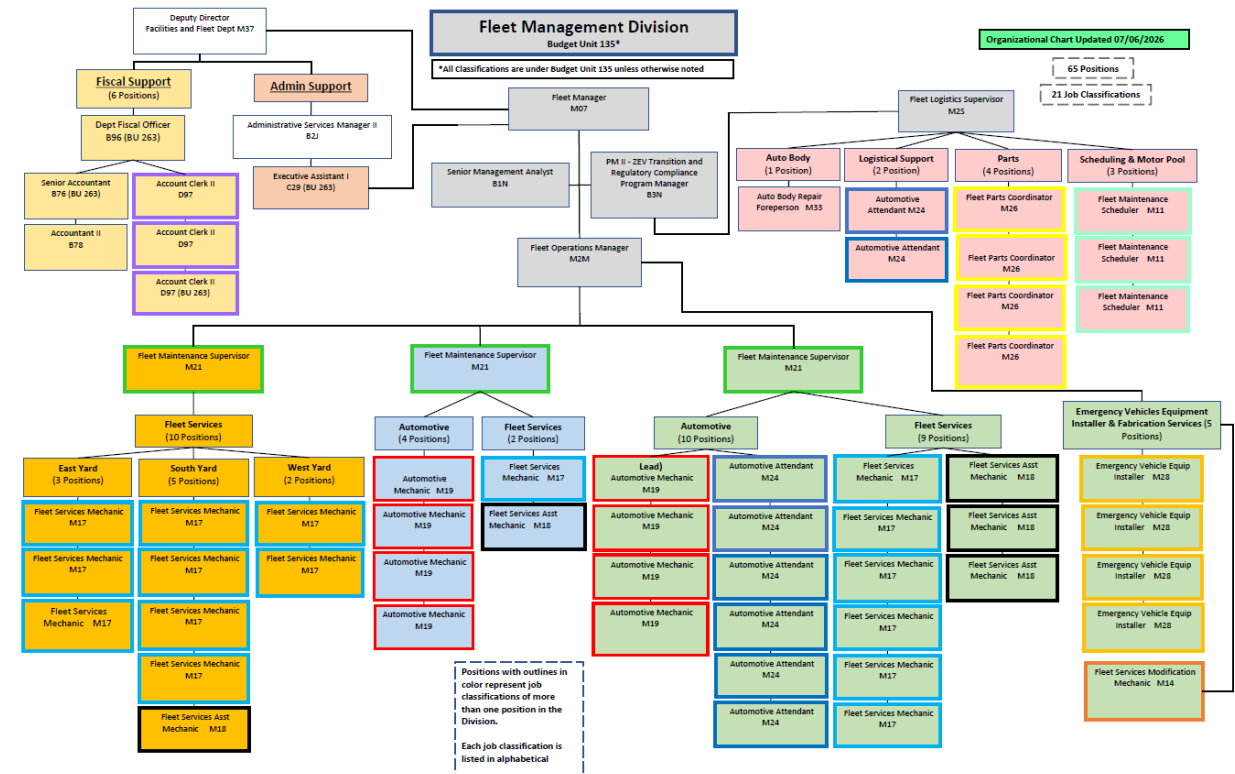
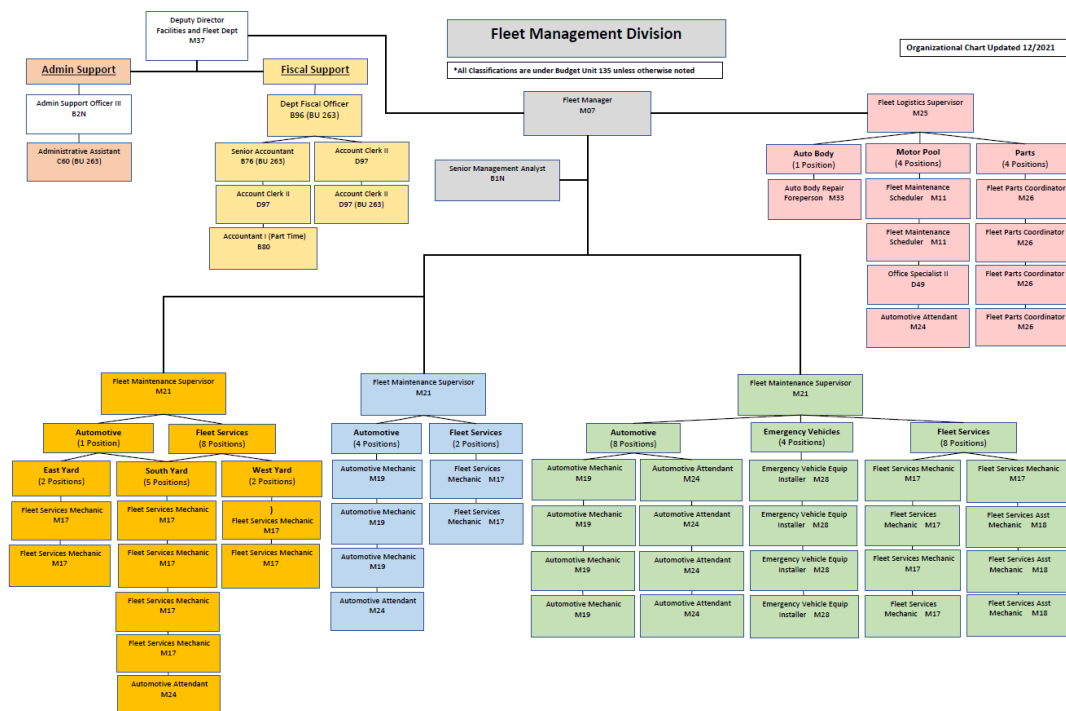
How to Build Your Case for Increasing Staffing Cont...

2021 – 57 Positions
16 Job Classifications



2026 – 65 Positions
20 Job Classifications

+8 Positions & +5 New Job Classifications
-2 Job Classifications





Staffing Challenges & Strategies

- **As Needed – Backfill**
 - Recruitment when Position Vacant
- **Underfill**
- **Interns**
- **Retiree Rehire**
- **Position Change**
- **Position Adds**
- **Partially Funded Positions**
- **Funding Splits**
- **Contractual Support or In house**

Fleet Management

1.00 Assistant Fleet Manager
1.00 Auto Services Utility Worker
2.00 Automotive Technician
1.00 Automotive Technician II
5.00 Automotive Technician III
0.15 Compliance Manager
0.05 Deputy Public Works Director
1.00 Fleet Coordinator
1.00 Fleet Manager
0.40 Office Specialist III
1.00 Public Works Supervisor
1.00 Senior Materials Handler
0.10 Staff Aide I

14.70 Total Fleet Management FTE



Essential Fleet Program Positions

Critical Positions/Functions beyond essential Technicians

- Inventory Management
- Coordinator – Customer Service & Priority
- Supervision – Work/Shop Efficiency
- Acquisition & Disposal
- Compliance
- Budget/Management Analyst
- Safety & Training
- Admin support

Positions May Vary Where They Reside
(Fleet, Other Division and/or Dept)

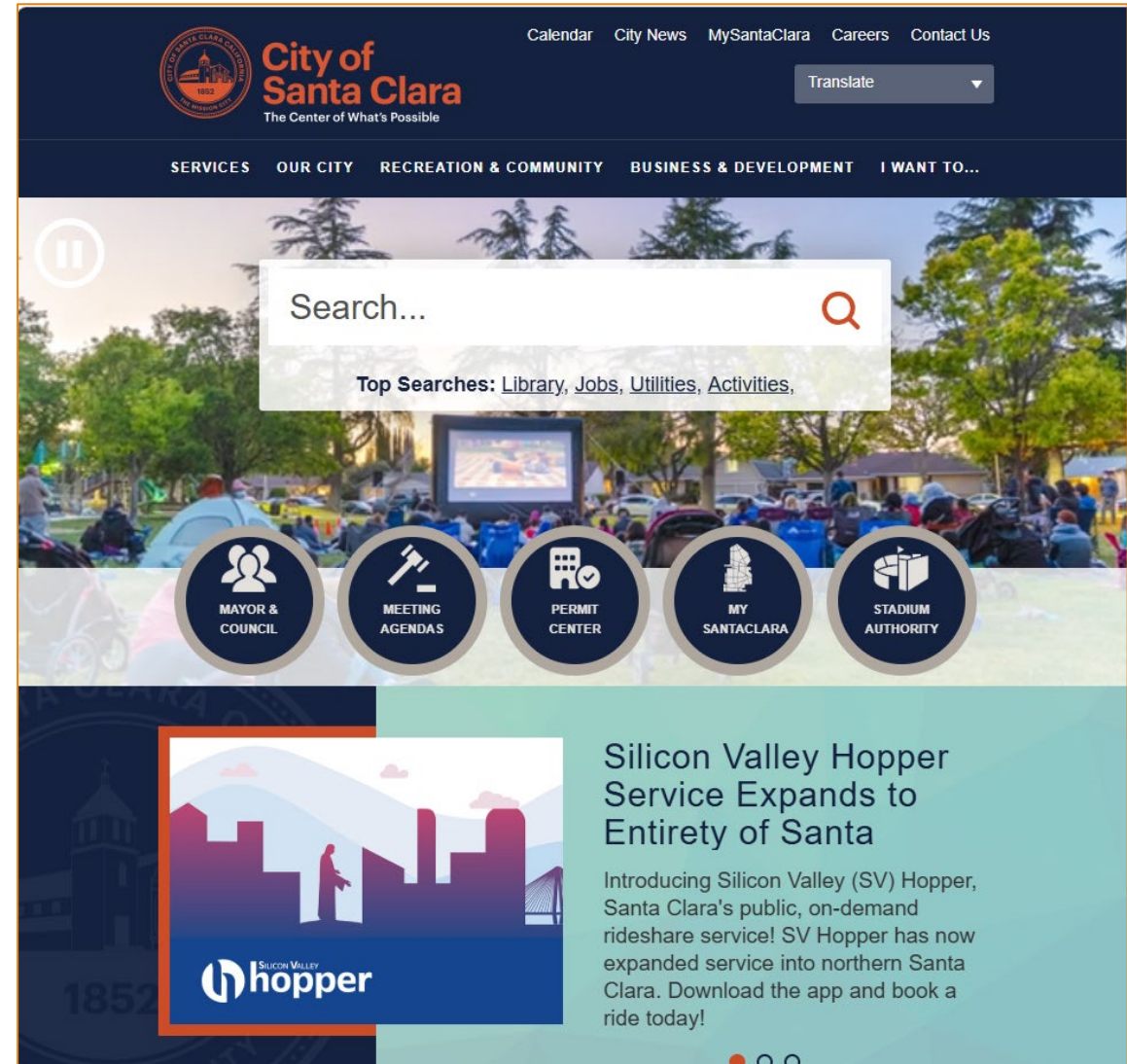




Resources Cont...

Agency Home Page

- City Services
- City Departments
- Fleet Program
 - Budgets
 - Performance Measures
 - CIP's
 - Fleet Positions
- Job Descriptions
- Caution on Data
 - Some Data Points May be Hard to Find
 - Misinterpret - data
 - Contact Agency for Details





Resources Cont...

Summary of Budgeted Positions by Fund

	FY 2023/24 Adopted	FY 2024/25 Adopted	FY 2025/26 Adopted	FY 2025/26 Change	FY 2026/27 Adopted
Positions by Fund					
General Fund (001)	725.97	729.57	744.51	14.94	760.51
Special Revenue Funds					
Building Development Services (155)	47.71	51.71	55.21	3.50	55.21
City Affordable Housing (165)	1.95	1.95	2.00	0.05	2.00
Convention Center Maintenance District (026)	0.10	0.10	0.10	0.00	0.10
Downtown Parking Maintenance District (025)	0.50	0.50	0.50	0.00	0.50
Fire CUPA Fund (159)	0.00	0.00	3.95	3.95	3.95
Fire Development Services (158)	9.04	9.04	10.45	1.41	10.45
Fire Operating Grant Trust (178)	18.00	18.00	18.00	0.00	0.00
Housing and Urban Development (562)	0.00	0.00	2.75	2.75	2.75
Housing Authority (164)	0.65	0.65	0.45	(0.20)	0.45
Housing Successor (169)	1.25	1.25	1.60	0.35	1.60
Subtotal Special Revenue Funds	79.20	83.20	95.01	11.81	77.01
Enterprise Funds					
Cemetery (093)	5.00	5.00	5.00	0.00	5.00
Convention Center Enterprise (860)	0.70	0.90	0.90	0.00	0.90
Electric (091, 191)	222.50	223.50	235.50	12.00	235.50
Recycled Water (097)	4.10	4.10	5.05	0.95	5.05
Sewer Utility (094)	22.25	22.25	23.15	0.90	23.15
Solid Waste (096)	7.10	7.30	7.30	0.00	7.30
Water Utility (092)	46.65	46.65	44.80	(1.85)	44.80
Subtotal Enterprise Funds	308.30	309.70	321.70	12.00	321.70
Internal Service Funds					
Fleet Management (053)	14.65	14.65	14.70	0.05	14.70
Information Technology Services (045)	6.00	7.00	8.00	1.00	8.00
Public Works Capital Projects Management (044)	14.13	14.13	14.13	0.00	14.13
Subtotal Internal Service Funds	34.78	35.78	36.83	1.05	36.83
Capital Improvement Program Funds					
Related Santa Clara Developer (540)	1.00	1.00	0.45	(0.55)	0.45
Subtotal Capital Improvement Program Funds	1.00	1.00	0.45	(0.55)	0.45
Total Budgeted FTE by Fund	1,149.25	1,159.25	1,198.50	39.25	1,196.50

Note: Several positions added in the General Fund between the FY 2024/25 Adopted Budget and the FY 2025/26 Adopted Budget will be reimbursed by SVP and Utility Funds through the City's cost allocation plan, including 5.75 positions in the Finance Department and 1.0 position in the City Attorney's Office.

Position Summary

	FY 2023/24 Adopted*	FY 2024/25 Adopted*	FY 2025/26 Adopted*	FY 2025/26 Change	FY 2026/27 Adopted*
Position Classification					
Account Clerk II	1.00	1.00	1.00	0.00	1.00
Assistant Director Of Public Works/City Engineer	1.00	1.00	1.00	0.00	1.00
Assistant Fleet Manager	0.00	0.00	1.00	1.00	1.00
Associate Engineer (Civil)	9.00	9.00	10.00	1.00	10.00
Auto Services Utility Worker	1.00	1.00	1.00	0.00	1.00
Automotive Technician I	2.00	2.00	2.00	0.00	2.00
Automotive Technician II	1.00	1.00	1.00	0.00	1.00
Automotive Technician III	5.00	5.00	5.00	0.00	5.00
Building Maintenance Manager					
Building Maintenance Worker					
Chief Of Party					
Code Enforcement Officer					
Code Enforcement Technician					
Compliance Manager					
Deputy Public Works Director					
Director Of Public Works					
Environmental Programs Manager					
Equipment Operator					
Fleet Coordinator					
Fleet Manager					
Management Analyst					
Mechanical Maintenance Worker					
Office Specialist II					
Office Specialist III					
Office Specialist IV					
Principal Engineer					
Principal Engineer/City Surveyor					
Principal Planner					
Public Works Inspector					
Public Works Supervisor					
Senior Engineer (Civil)					
Senior Engineering Technician ¹					

Fleet Management

1.00 Assistant Fleet Manager
 1.00 Auto Services Utility Worker
 2.00 Automotive Technician
 1.00 Automotive Technician II
 5.00 Automotive Technician III
 0.15 Compliance Manager
 0.05 Deputy Public Works Director
 1.00 Fleet Coordinator
 1.00 Fleet Manager
 0.40 Office Specialist III
 1.00 Public Works Supervisor
 1.00 Senior Materials Handler
 0.10 Staff Aide I

14.70 Total Fleet Management FTE



Resources

Reach Out to Fleet Associations

MEMA Board

- City & County of San Francisco - Don Jones & Camilla Taufic
- City of Sacramento - Alison Kerstetter
- City of Fairfield - David Renschler & Sean O’Gara
- City of San Jose - David Mesa Fleet Manager (MEMA & PFSA)
- City of San Ramon - Thomas Anderson
- City of Santa Clara – Dan Sunseri
- County of Santa Clara - David Worthington
- Rick Keithley – Associate Member
- Keith Leech – Fleet Manager Hall of Fame



Thank You to the NorCal Clean Cities and
Communities Coalition, Fleet Associations, and
Partners that Helped Make this Recording Possible



Questions



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