VOLUME III-B

CAPITAL PROJECT DESCRIPTION FOR ANNUAL PROJECTS

(2023 – 2025)

A-1, 26, 51

2023-2025 – Service Line Replacements

Service Line Replacements is an ongoing annual program that replaces service laterals that have reached the end of their useful life and failed. Suburban owns and maintains approximately 76,000 service laterals ranging in size from 1-inch to 10-inch. The table below summarizes the materials for service laterals in Suburban's service area.

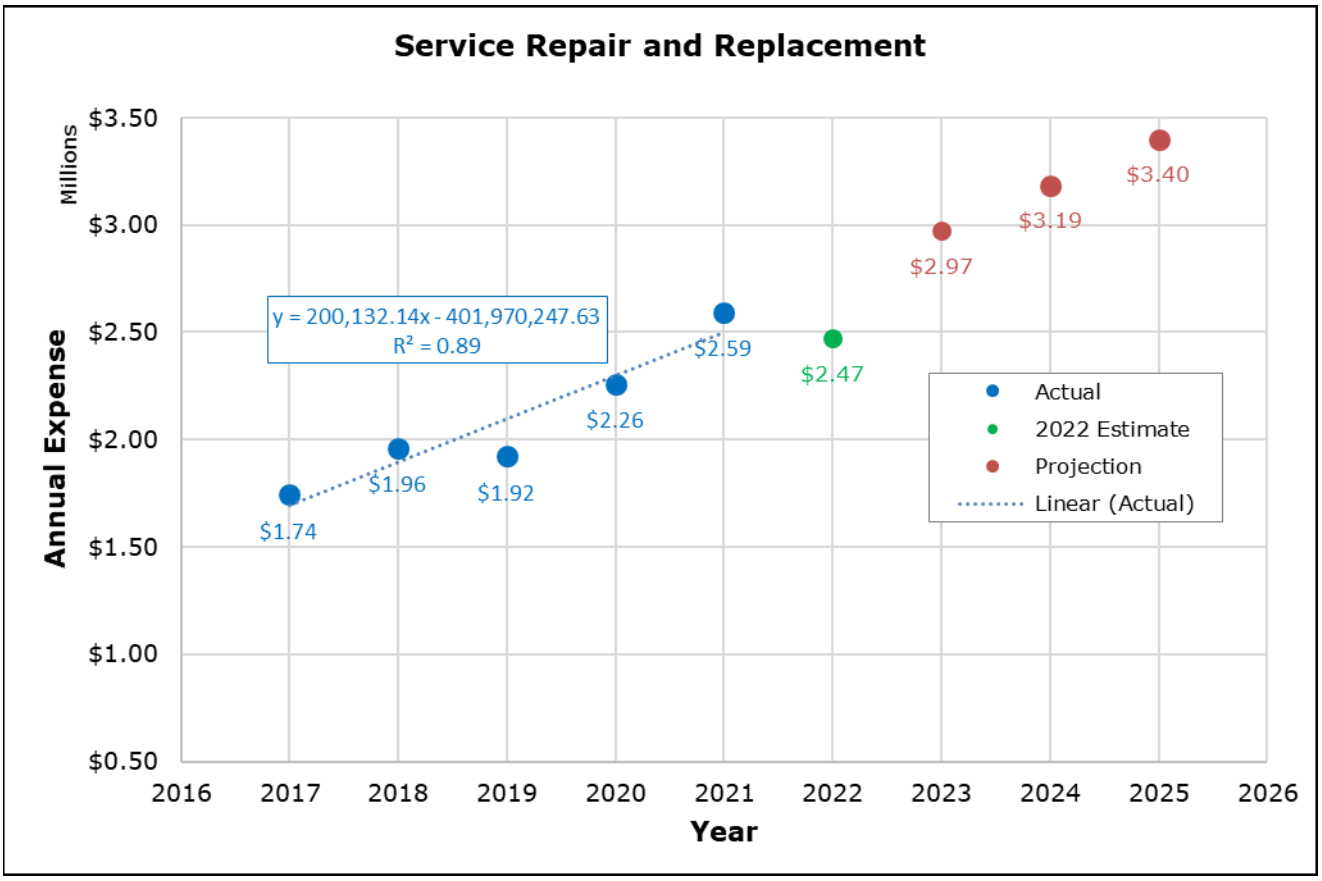
Material	Notes
Copper	
Galvanized Steel	This uncoated metallic pipe is very susceptible to corrosion
Polyethylene	Found in City of West Covina
High Density Polyethylene (HDPE)	Previous standard. Line failed due to liner.
Steel (CML&L, CML&W)	Greater than or equal to 4-inch
Cross-Linked Polyethylene (PEX)	Current Suburban Standard
Grey Plastic	Found in City of La Mirada

Suburban has experienced an increase of service line failures on Orangeburg SP Polyethylene and Grey Plastic pipe. The City of West Covina installed Orangeburg service lines in the 1970s. Grey Plastic Service lines were installed in the City of La Mirada in the 1950s. These service lateral materials are weaker than the cross-linked Polyethylene (PEX) Suburban installs today, and are susceptible to splitting at fittings and where the material is swept to change alignment. Suburban has observed plastic service laterals failing at the connection point at the corporation stop and the angle meter ball valve where stainless-steel liners cut into the service line. New service lines are installed with plastic liners to mitigate this issue.

Service line failures also occur when municipal agencies grind and repave streets. Asphalt paving machines may weigh up to 40,000 pounds, and the loading and vibration of these machines cause service laterals to break and leak. These leaks often surface after the paving has been completed, damaging recently paved streets and requiring costly asphalt pavement repairs. These service breaks will continue as municipal agencies continue to repave streets aggressively.

Basis for Budgeted Cost

Due to the unpredictable occurrence of service lateral failures, linear regression analysis for the last five years (2017-2021) of annual expenses was used to forecast the budget. See Workpapers VOLUME III-B CAPITAL PROJECT DESCRIPTION FOR ANNUAL PROJECTS (2023 – 2025) (A-1,26,51) for the regression chart. The table below summarizes the results.



Year	Total Cost
2017	$1,743,503
2018	$1,961,051
2019	$1,923,295
2020	$2,260,316
2021	$2,594,531
2023	**$2,971,000**
2024	**$3,185,000**
2025	**$3,400,000**

Note that service replacement costs for2022 were unavailable when this testimony was prepared and excluded from the analysis.

A-8, 33, 58

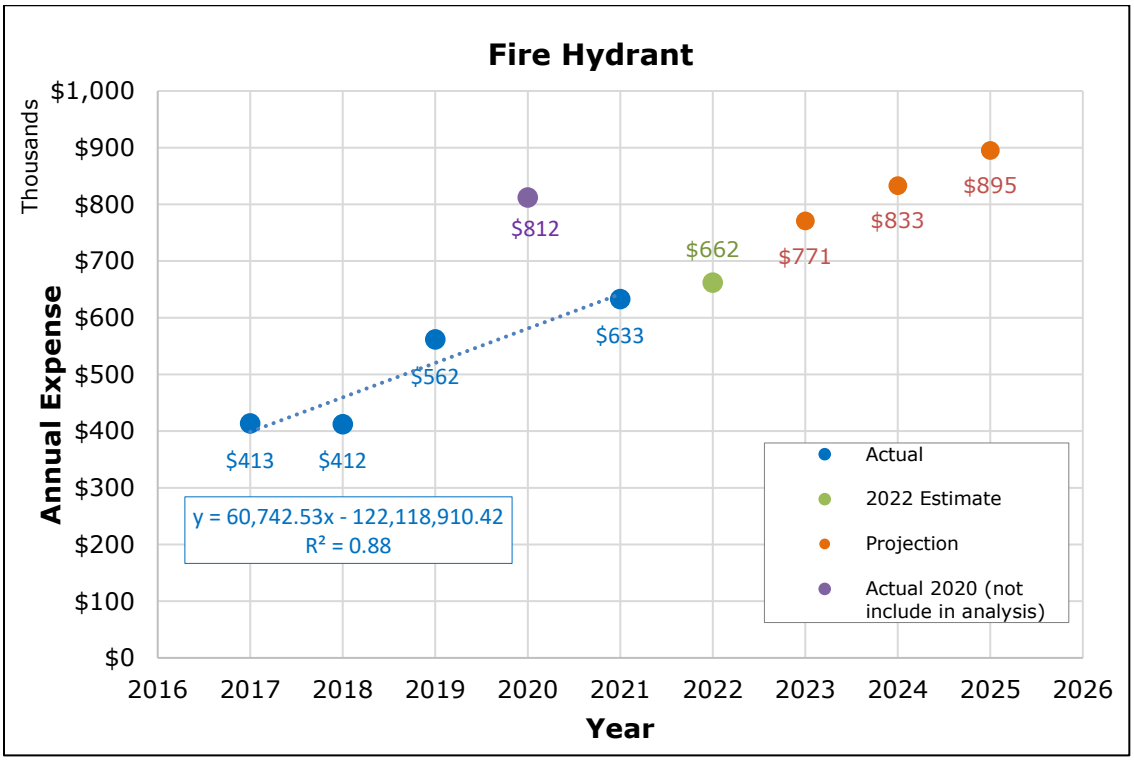
2023-2025 – Fire Hydrant Replacements

Fire Hydrant Replacements is an ongoing annual program. This program is intended to replace fire hydrants that reach the end of service life, fail, and are damaged by hit-and-run vehicle accidents where there are no opportunities to collect damages from the drivers. Suburban owns and maintains approximately 6700 fire hydrants throughout the service area.

Fire Hydrants serve a critical function of providing fire protection to structures. Customer property is put at greater risk when fire hydrants are unavailable so fire hydrant replacement is a priority for Suburban.

Basis for Budgeted Cost

Fire hydrant failure and accidental damage is unpredictable. As the hydrant valve exercising program is implemented, many failed hydrants are inspected, identified, and replaced. In addition, increased construction costs in recent years have resulted in higher costs to replace fire hydrants. A linear regression analysis of the annual expenses for the last five years (2017-2021) is used to forecast the budget for replacing hydrants. See the analysis chart below. The Table summarizes the results.



Year	Total Cost
2017	$413,470
2018	$412,233
2019	$561,776
2020	$811,946
2021	$632,800
Linear Regression	
2023	$771,000
2024	$833,000
2025	$896,000

Note that the cost for 2022 were not available when this testimony was prepared and, for this reason, is not included in the analysis.

The total budget includes Engineering and Inspection, General Administration, and Contingency factors. The Engineering and Inspection factor accounts for the estimated direct cost required to plan, design, and inspect the project, cost of permit fees, cost of internal labor, and cost of outside consultant services. The General Administration factor considers Suburban's general administrative expenses. The contingency factor accounts for unforeseen construction conflicts and complications that could result in additional project costs.

A-50

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PROJECT DESIGN REPORT

FROM: Engineering Department
DATE: September 19, 2022
DISTRICT: San Jose & Whittier/La Mirada District
SUBJECT: 2024 Electrical Vehicle Purchase: CP-492

Introduction

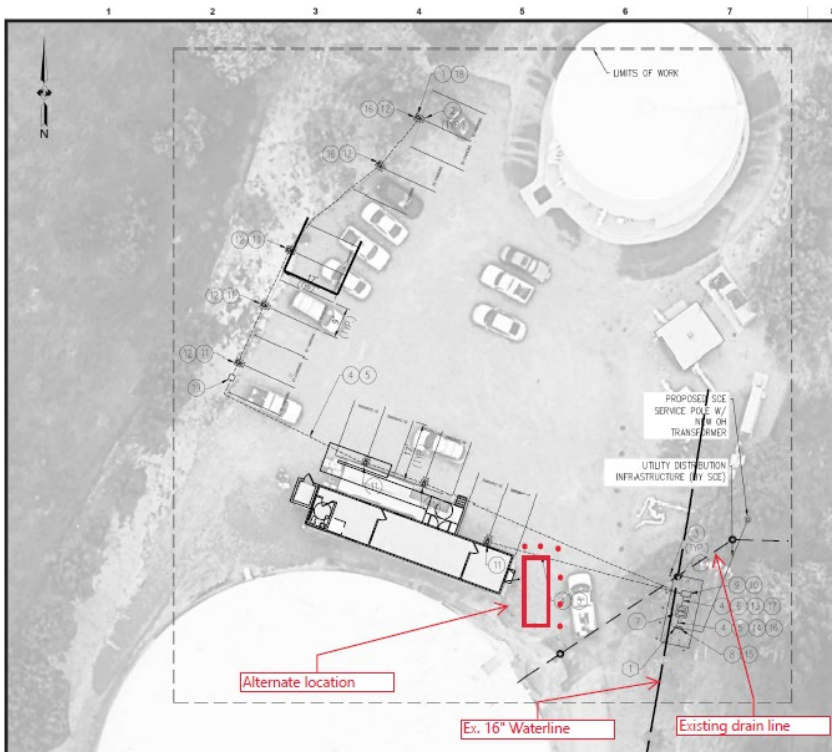
To improve fuel efficiency, reduce operating costs passed on to customers, and reduce greenhouse gas emissions and resulting carbon footprint, Suburban will purchase hybrid trucks and electric trucks.
In 2024, eleven (11) vehicles will be purchased. Nine (9) vehicles will be replaced due to mileage exceeding the replacement mileage threshold of 120,000 miles. Two (2) vehicles are additions to the fleet for on-call staff.

New vehicles added to the fleet for on-call purposes are necessary to ensure emergency service can be provided to customers and minimize water supply disruption. Purchased vehicles will be hybrid or electric to reduce customer costs and support the PUC's ESJ goals related to climate change.

Background

Electric Charging Station Infrastructure

Electric vehicle batteries need to be charged with charging stations. Collaboration with Southern California Edison (SCE) determined that Plant 132 has sufficient space to construct charging infrastructure that includes eight (8) dual-outlet charging stations to accommodate the sixteen electric vehicles used by the Field Services department. The following preliminary site plan prepared by SCE shows the location of the charging stations.



SCE has initiatives to encourage customers to use electric vehicles instead of the internal combustion engine (ICE) driven vehicles. SCE has a program that pays to install charging station infrastructure; customers only purchase charging station pedestals. It is prudent and financially beneficial to customers for Suburban to install the infrastructure at no cost before these initiatives expire. Suburban and SCE entered into an agreement to install charging station facilities by the end of 2023, which also aligns with Suburban's EV purchases. Taking advantage of SCE's initiative saves Suburban's customers the installation cost of the electrical infrastructure. The cost to purchase eight duo pedestals is $23,600. The vendor's quote is included in the appendix.

Project Justification

Replacement Mileage Threshold

Suburban replaces utility vehicles that meet or exceed replacement mileage thresholds consistent with the Department of General Services (DGS), which the CPUC approved for California Water Service in Decision D.07-12-055 (December 20, 2007). The DGS policy replaces vehicles after 120,000 miles or earlier if it is cost-effective, regardless of mileage.

On-call Staff

Suburban's on-call emergency leak response program was restructured to be a volunteer participation program to improve employee work life balance. Participating employees are required to take home company vehicles so they can respond timely and directly to the emergency leak event. Typical responses include both major and minor leaks reported by customers and local emergency services agencies, and after hour customer reconnections, and responses to customer requests to temporary turn off service to facilitate emergency afterhours private plumbing repairs. . The revised program has been successful, with customers benefiting from improved response time and reassurance that Suburban is available to respond timely. During business hours, some of the staff participating in the on-call program are assigned larger vehicles such as dump trucks and valve trucks. These larger vehicles are not suitable to be driven home and parked at their residences and additional smaller utilityvehicles were required to support the program. To meet the need for additional vehicles between General Rate Cases (GRC) Suburban reinstated high mileage vehicles that had been retired and replaced. These high mileage vehicles are unreliable for responding to emergency calls.

Suburban plans to acquire additional reliable and fuel-efficient vehicles to meet this need and dispose of the high mileage vehicles.

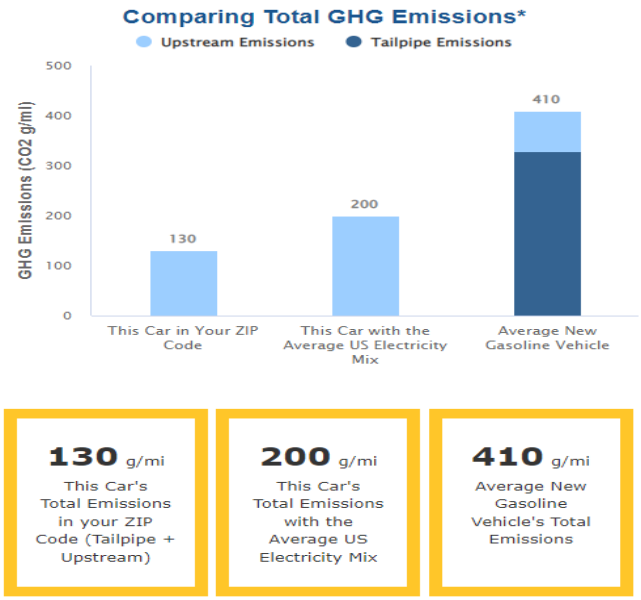
Environmental and Social Justice Goals

The transportation sector contributes 83% of oxides of nitrogen emissions, 95% of diesel particulate matter, and nearly 35% of statewide greenhouse gas emissions. Suburban intends to transition to an electric vehicle fleet to support PUC's ESJ initiatives.

In response to the California Public Utilities Commission's (CPUC) Environmental and Social Justice (ESJ) goals. Suburban will replace Internal Combustion Engine (ICE) vehicles with Zero Emission Vehicles (ZEV), and hybrid vehicles to reduce carbon emissions in the communities that it serves. Investing in ZEV's and hybrids directly supports CPUC's ESJ Goal #2 to invest in clean energy resources that benefit ESJ communities by improving air quality and public health. Greenhouse emissions and the resulting pollution and global warming effects are issues affecting all Californians.

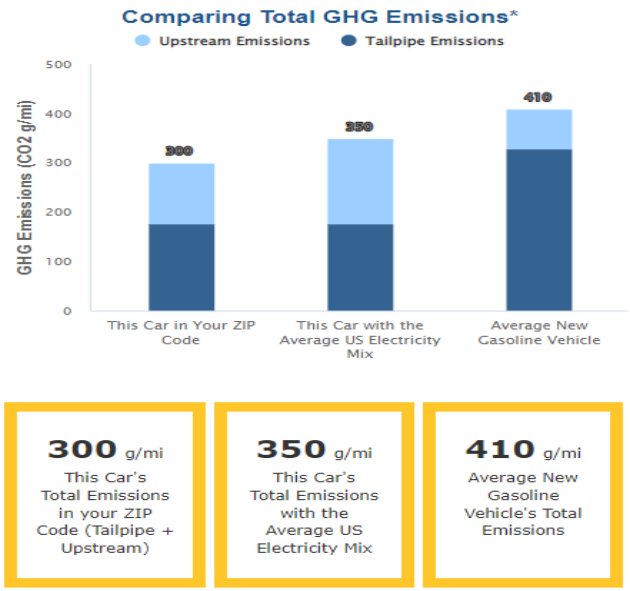
ZEVs are powered by electricity resulting in significantly less carbon emissions than are generated by an equivalent ICE vehicle. Figure 1 (**Workpaper III-B)** from the U.S. Department of Energy shows the average emissions of an ICE truck operating in Covina, CA produces a total emission of 410 grams per mile. The total emissions from an electric truck is 130 grams per mile, less than one-third of ICE vehicle. The total emissions are determined by summing the emissions generated from operating the vehicle, producing the energy source, and transporting and distributing the energy source.

Figure 1



Hybrid vehicles use a combination of electric batteries and motors with a gas engine to dramatically increase fuel efficiency. Hybrids produce significantly less carbon emissions than inefficient ICE vehicles. The U.S. Department of Energy determined (Figure 2 shown on Workpaper III-B, A-50) the average new ICE truck emission in Covina, CA is 410 grams per mile versus the total emissions from a hybrid vehicle at 300 grams per mile. The total emissions are determined by summing the emissions generated from operating the vehicle, producing the energy source, and transporting and distributing the energy source.

Figure 2



Continuing the use of ICE vehicles does nothing to reduce carbon emissions. According to the U.S. Department of Energy, 1.6 million tons of greenhouse gases are released annually.

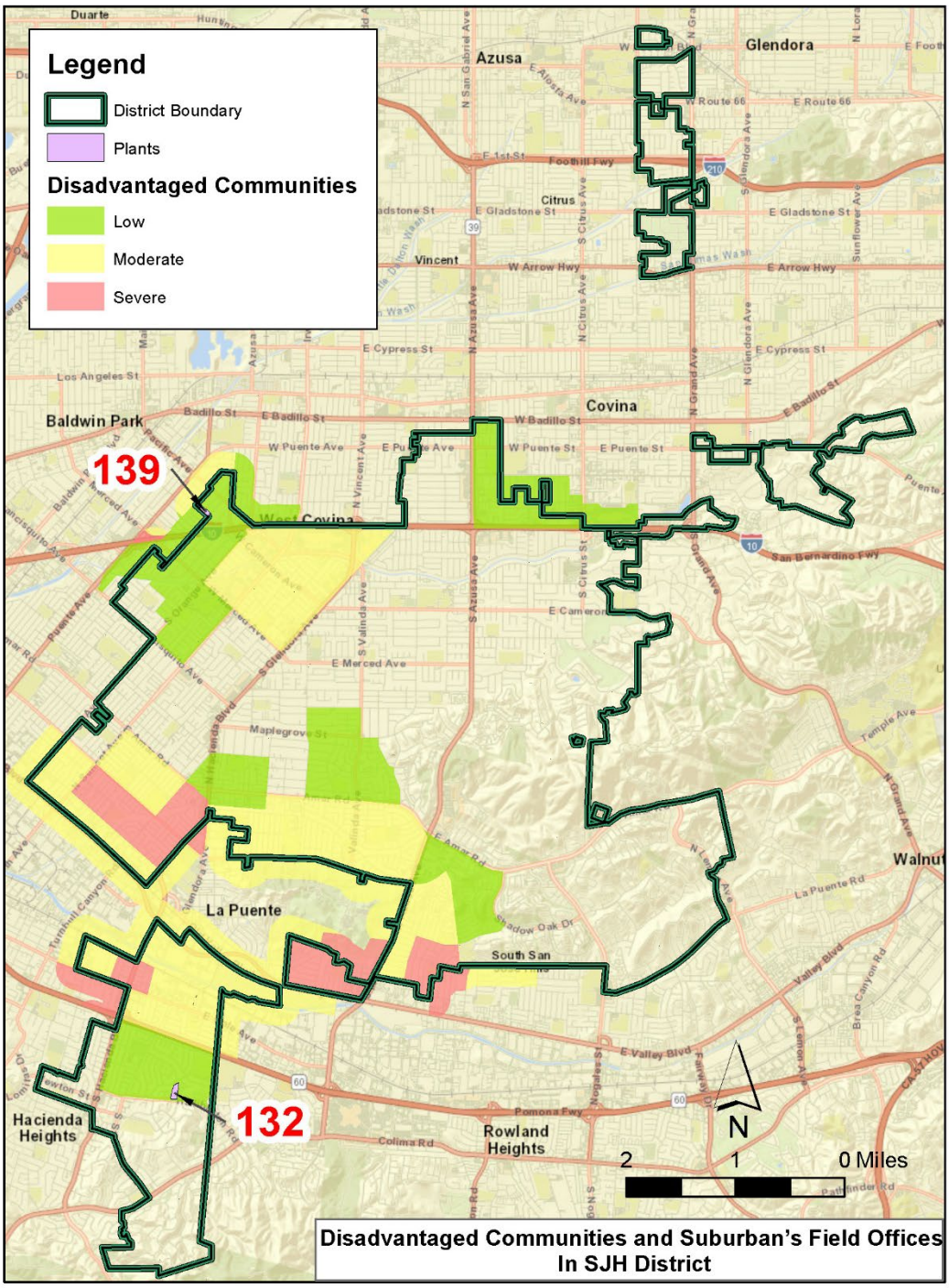
Table 1 below shows that a Suburban truck is driven approximately 730 miles a month, releasing 410 grams of carbon dioxide per mile. The calculation determined that ten (10) ICE trucks generate about 6,600 pounds of carbon dioxide a month. Suburban's plan to purchase seven (7) electric and three (3) hybrid trucks will reduce carbon dioxide emissions by 3,685 pounds per month, or 44,226 pounds per year. The Washington Post (https://www.washingtonpost.com/health/california-is-ahead-of-other-states-in-cutting-carbon-emissions-report-says/2020/07/24/0af96632-cc73-11ea-b0e3-d55bda07d66a_story.html) reports that the average house in Los Angeles County produces 2.83-tons of carbon dioxide each year. Suburban's plan will eliminate the equivalent carbon footprint of eight homes.

Table 1 - Greenhouse Gas Emissions (Reduction)

Year	2024	
	Month	Annual
Miles	7,300	87,600
Total CO2 Produced - Gas (Lbs)	6,598	79,181
grams CO2/mile - Gas	410	
grams CO2/mile - EV	130	
grams CO2/mile - Hybrid	300	
Delta (grams CO2/mile) - Gas & EV	280	280
Delta (grams CO2/mile) - Gas & Hybrid	110	110
CO2 Reduction (grams) - EV	130	17,169,600
CO2 Reduction (grams) - Hybrid	300	2,890,800
Total CO2 Reduction (grams)	280	20,060,400
Total CO2 Reduction (Lbs)	110	44,226
LA County Average House - CO2	130	8

The conversion of the Field Services fleet from ICE to EV and hybrid supports CPUC's ESJ initiatives. Emissions reductions benefit all of Suburban's customers and, most importantly, the neighborhood adjacent to Plant 132, which is classified as a disadvantaged community. The California Office of Environmental Health Hazard Assessment (OEHHA) map shows that Plant 132 is in a disadvantaged community (**Figure 3 shown on Workpaper III-B, A-50**).

Figure 3 – Plant 132 Proximity to Disadvantaged Communities



A disadvantaged community is an area in California that suffers disproportionately from economic, health and environmental burdens. These burdens include poverty, high unemployment, air and water pollution, hazardous waste, and a high incidence of asthma and heart disease. Environmental and social justice seeks to come to terms with and

remedy a history of unfair treatment of communities, predominantly communities of people of color, and low-income residents. These communities have been subjected to disproportionate impacts from one or more environmental hazards, socioeconomic burdens, or both.

In performing their daily duties, Suburban Field Services members drive throughout disadvantaged communities. Use of EV and hybrid vehicles reduces the hazardous environmental exposures impacting these communities. **Figure 4 (Workpaper III-B, A-50)** shows the environmental hazards that residents are exposed to including ozone, particulate matter, diesel particulate matter, and toxic release. (https://oehha.ca.gov/calenviroscreen/scoring-model), (https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40).

Suburban's transition to an electric and hybrid fleet reduces the environmental impact on our community by improving air quality.

Figure 4 - Disadvantage Community (Exposures)

Census Tract: 6037408631 (Population: 5,214)

Exposures	
Ozone	69
Particulate Matter 2.5	82
Diesel Particulate Matter	86
Toxic Releases	83
Traffic	94
Pesticides	0
Drinking Water	86
Lead from Housing	81

Sensitive Populations	
Asthma	51
Low Birth Weight	10
Cardiovascular Disease	50

In summary, the transition to EV and hybrid vehicles reduces Suburban's carbon footprint and furthers the CPUC ESJ Goal # 2 to increase investment in clean energy resources to benefit ESJ communities, especially to improve local air quality and public health

Customer Cost Savings

Fuel Cost

Suburban proposes to purchase seven (7) Ford F150 Lightning electric pickup trucks, three (3) hybrid Ford F-150s, and one (1) Toyota Prius in 2024. Replacing vehicles with EVs and Hybrids instead of ICE and purchasing the charging stations required will increase the CAPEX cost by approximately $135,453. **Table 2** below illustrates the estimated fuel expenses for ICE vehicles compared to EV and Hybrid vehicles. The table also shows the vehicle purchase cost difference between the EV alternative and the fuel savings. Transitioning to electric and hybrid vehicles is a more cost-effective solution for Suburban's vehicle fleet. A detailed cost benefit analysis is included in the appendix; the project's 6.6% IRR demonstrates that customers benefit from purchasing EV's and hybrids as compared to purchasing ICE vehicles.

Internal Rate of Return (IRR) - IRR is a metric used in financial analysis to estimate the benefit of potential investments. IRR is the discount rate that makes the net present value (NPV) of all cash flows equal to zero in a discounted cash flow analysis. A positive IRR means that a project or investment returns value to the customers. The higher the IRR, the more desirable an investment is to make.

A detailed cost benefit analysis is included in the appendix; the project's 6.6% IRR demonstrates that customers benefit from purchasing EV's and hybrids as compared to purchasing ICE vehicles.

Table 2 – Vehicle Purchase Cost Difference and Field Savings

Department	Replacement (ICE)	Replacement (Alternative)	Cost (Alternative)	Cost Difference	Fuel Cost Savings
Mechanical Maintenance	F350	F150 - Hybrid	$66,669.83	-$3,305	$3,584
SJH Construction	F150	F150 - Hybrid	$66,670.83	$2,208	$2,410
Field Services	Ranger	F150 - Electric	$75,686.63	$22,024	$2,194
Field Services	Ranger	F150 - Electric	$75,686.63	$22,024	$2,194
SJH Construction	F150	F150 - Electric	$75,686.63	$11,224	$3,135
WLM Construction	F150	F150 - Electric	$75,686.63	$11,224	$3,135
Field Services	Ranger	F150 - Electric	$75,686.63	$22,024	$2,194
Field Services	Ranger	F150 - Electric	$75,686.63	$22,024	$2,194
Mechanical Maintenance	F350	F150 - Electric	$75,687.63	$5,713	$4,310
Mechanical Maintenance	F350	F150 - Hybrid	$66,669.83	-$3,305	$3,584
Production	Prius	Prius	$33,270.69	$0	$0
Charging Stations				$23,600	
Total Cost			**$729,817.86**	**$135,454**	**$28,935**
Data:					
average annual mileage of 8,760					
fuel cost of $4.57/gallon					
electricity cost of $0.21/kWh					

Alternatives

Alternative 1 – Purchase ICE and retain high mileage on-call vehicles

This alternative continues using ICE vehicles with high carbon emissions and does nothing to further the CPUC's ESJ goals. This alternative does not address the adverse health impacts on customers in disadvantaged communities from pollution discharged by ICE vehicles and Suburban's overall carbon footprint resulting from greenhouse gas emissions from vehicles.

This alternative results in higher fuel costs for Suburban's customers.

Lastly, this alternative expose customers to the risk of longer service interruptions due if insufficient vehicles available for on-call staff.

This is alternative is not recommended.

Alternative 2 – Purchase ICE and on-call vehicles

This alternative continues the use of ICE vehicles with high carbon emissions and does nothing to further the CPUC's ESJ goals. This alternative does not address the adverse health impacts on customers in disadvantaged communities from pollution discharged by ICE vehicles and Suburban's overall carbon footprint resulting from greenhouse gas emissions from vehicles.

This alternative results in a higher fuel costs for Suburban's customers that ZEV and hybrid alternatives.

However, this alternative will provide reliable vehicles for on-call staff to ensure an expeditious response to emergencies and minimize service interruptions to customers.

This is alternative does not address CPUC’s ESJ Goals and results in higher fuel costs compared to other alternatives.

Alternative 3 – Purchase ZEV and Hybrid vehicles and required vehicles for on-call

This alternative replaces vehicles exceeding the DSGS mileage threshold, and purchases additional vehicles for on-call staff to reliably and timely respond to customers after hours. New vehicles will be electric and hybrid and replace ICE vehicles in Suburban's fleet in 2024.

This alternative supports CPUC's ESJ Goal #2 by reducing the impact of pollution in a disadvantaged community, reducing Suburban's carbon footprint, reduces fuel costs passed on to customers, and ensures on-call staff can reliabily and timely respoind to customer and minimize service interruptions. For these reasons, this alternative is recommended.

Appendix 1 – Cost Benefit Analysis

Appendix 2 – EV Charger Quote

Date	Year	Net Gross Multiplier	Fuel Cost ($/yr)	Electric Charging Cost ($/yr)	Cost Difference ($/yr)	Total Savings ($)	Annual Revenue Requirement	Years after EV purchase	Benefit (Cost) To Customers (annual)	Benefit (Cost) To Customers (cumulative)	NPV Benefit (Cost) To Customers	NPV Benefit to Customer (Cumulative)
									Discount Rate (IRR)	**6.644%**		
									NPV Of Future Benefits (Costs) To Customers	(0)		
7/1/2024	2023/2024	1.00	50,194.00	13,315.00	-36,879.00	0	-	1	0	-	-	-
7/1/2025	2024/2025	1.00	50,194.00	13,315.00	-36,879.00	28,935	33,951	2	(5,016)	(5,016)	(4,410)	(4,410)
7/1/2026	2025/2026	1.00	50,194.00	13,315.00	-36,879.00	28,935	32,670	3	(3,735)	(8,751)	(3,080)	(7,490)
7/1/2027	2026/2027	1.00	50,194.00	13,315.00	-36,879.00	28,935	31,390	4	(2,455)	(11,206)	(1,898)	(9,388)
7/1/2028	2027/2028	1.00	50,194.00	13,315.00	-36,879.00	28,935	29,055	5	(120)	(11,327)	(87)	(9,476)
7/1/2029	2028/2029	1.00	50,194.00	13,315.00	-36,879.00	28,935	27,424	6	1,511	(9,816)	1,027	(8,448)
7/1/2030	2029/2030	1.00	50,194.00	13,315.00	-36,879.00	28,935	25,792	7	3,143	(6,673)	2,003	(6,445)
7/1/2031	2030/2031	1.00	50,194.00	13,315.00	-36,879.00	28,935	24,160	8	4,775	(1,898)	2,854	(3,591)
7/2/2031	2030/2032	1.00	50,194.00	13,315.00	-36,879.00	28,935	22,528	9	6,407	4,509	3,591	0

Description of Capital Improvement	2022	2023	2024	2025
Cost Difference to purchase EV		-	135,454	
Total		0	135,454	0
Fuel Savings		0	28,935	

	Total	Annual Reveue Requirement		
7/1/2024	-	-		
7/1/2025	33,951	-	33,951	
7/1/2026	32,670	-	32,670	-
7/1/2027	31,390	-	31,390	-
7/1/2028	29,055	-	29,055	-
7/1/2029	27,424	-	27,424	-
7/1/2030	25,792	-	25,792	-
7/1/2031	24,160	-	24,160	-
7/2/2031	22,528		22,528	-

Authorized Rate of Return by asset

	2024	2025	2026	2027	2028	2029	2030	2031	2032
Electric Vehicles	0	1	2	3	4	5	6	7	8
Long Term Debt	2.21%	2.21%	2.21%	2.21%	2.21%	2.21%	2.21%	2.21%	2.21%
Preferred Stock	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%
Common Equity	5.55%	5.55%	5.55%	5.55%	5.55%	5.55%	5.55%	5.55%	5.55%
Gross Return on Rate Base	**7.85%**	**7.85%**	**7.85%**	**7.85%**	**7.85%**	**7.85%**	**7.85%**	**7.85%**	**7.85%**
Depreciation Adjustment	0.00%	-0.95%	-1.89%	-2.84%	-3.78%	-4.73%	-5.67%	-6.62%	-7.56%
Net Return on Rate Base	**7.85%**	**6.91%**	**5.96%**	**5.02%**	**4.07%**	**3.13%**	**2.18%**	**1.24%**	**0.29%**
Income Tax	2.16%	2.16%	2.16%	1.38%	1.12%	0.86%	0.60%	0.34%	0.08%
Depreciation Rate	12.03%	12.03%	12.03%	12.03%	12.03%	12.03%	12.03%	12.03%	12.03%
2019 UF	1.43%	1.43%	1.43%	1.43%	1.43%	1.43%	1.43%	1.43%	1.43%
Uncollectibles	0.45%	0.45%	0.45%	0.45%	0.45%	0.45%	0.45%	0.45%	0.45%
Franchise Fee	1.14%	1.14%	1.14%	1.14%	1.14%	1.14%	1.14%	1.14%	1.14%
Authorized Rate of Return	**25.06%**	**24.12%**	**23.17%**	**21.45%**	**20.25%**	**19.04%**	**17.84%**	**16.63%**	**15.43%**

EvGateway Charge Point Operator (CPO)

SouthWest Water Company®

EvGateway offers its network monitoring software and technical expertise as a service and proposes its solution to suit the business model and operations of Customers EV charging services

Executive Summary

Electric Vehicle Charging Network

EvGateway **Electric Vehicle Charging Network (EVCN**) for Fleet and a Public charging monitors the health of the Charging Station equipment, activates, and terminates charging events, initiates pay as you go transactions and collects usage data from charging stations.

EvGateway Solution Comprises of:

1. Network
2. Mobile Application for payment processing and tracking.
3. 24 x 7 Monitoring using Network & Help Desk

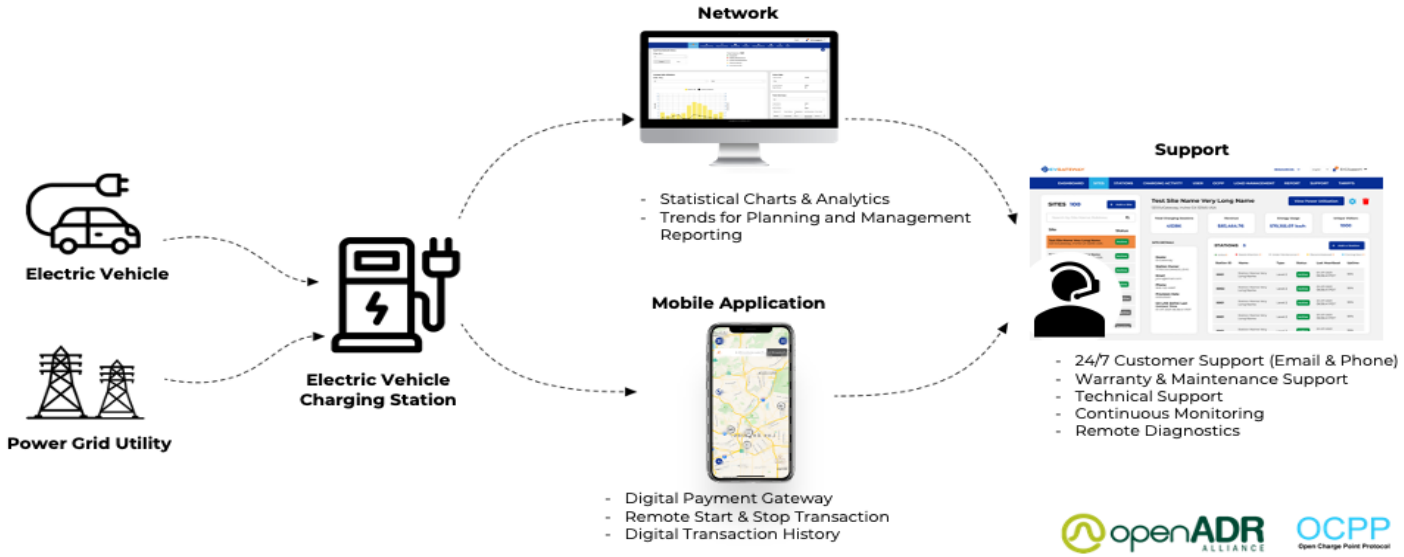


Figure 1 - EvGateway Solution Architecture

Electric Vehicle Central Intelligence

Central Intelligence is a complete electric vehicle solution. Combination on Network to Chargers and centralized Portal to give all the information of chargers for EV-drivers and charger owner, payment processing with a Mobile application for iPhones and Android phones. Combined with 24x7 monitoring of every charger and help desk.

- **OCPP 1.6** compliant network enables you to add any OCPP 1.6 and above compliant charging stations to the network and start monitoring its activities. EvGateway is an open charge point protocol and an open ADR compliant network
- Set the price that drivers pay to use charging stations based on energy cost, duration, time of use. Funds collected from drivers are electronically transferred to a designated bank account. EvGateway network supports **Multiple Digital Payment gateways.**
- Advanced access controls manage which drivers can access stations and when.
- Statistical charts and analytics, available with a click, summarize important trends for planning and management reporting.
- Waitlist makes charging more convenient by notifying drivers when a charging spot becomes available for them and holding it until they can plug in their vehicle.
- A graphical dashboard shows real-time status and a detailed map, making it easy to manage stations from your desk or mobile phone.
- **Mobile Application** allows users to located and navigate to the nearest charging stations and complete a paperless charging session

Key Features of the EvGateway Software

✓ Portal	✓ Network
▪ Dashboard	▪ Monitor AC Chargers
▪ Reports	▪ Monitor DC Chargers
▪ Administration	▪ Monitor Ports
▪ Power Management	▪ Monitor Station Signal
▪ Station Management	▪ Monitor Hardware Related Faults
▪ Customer Management	▪ OCPP – 1.6 and above
▪ Site Management	✓ **OCPP - 1.6 and above**
▪ Driver Management	▪ OCPP Core Functionalities
▪ Site Owner Management	▪ OCPP Core Functionalities
▪ RFID / FOB Management	▪ Firmware Management
▪ Access Control Roles	▪ Reservation
▪ Set Vending Price	▪ Trigger Message
▪ Manage Curtailment	▪ Smart Charging
▪ Fleet Management	▪ Remote Diagnostics
▪ Dealer or Reseller Management	✓ **Features**
▪ Multi Language Support	▪ EvGateway Network Customization
▪ Driver related help - FAQ, Manual	▪ Mobile App Customization
✓ **Mobile Application**	▪ Driver Support
▪ Android	▪ Station Owner Support
▪ Android	▪ Network & Backend Support (IT)
▪ IOS	▪ Request Additional functionality
▪ Navigation MAP	▪ Public IP
▪ Favorites	▪ Separate Database Instance
▪ Trip Planner	▪ Customization
▪ Charging Activity	▪ EvGateway Hosting
▪ Payments	▪ SSL Certificates
▪ Notifications and Alerts	▪ Domain Support
▪ Filter Options	▪ Hosting Support
▪ Remote Start / Stop	▪ Web Portal Support
▪ Reserve Charging Sessions	▪ Security Monitoring
▪ Support - Driver	▪ Data at Rest Security
▪ QR Scanner	✓ **Compliance**
○ **Payment Gateway**	▪ OPEN ADR 2.0b
○ STRIPE/Authorize.net/PAYPAL	▪ OCPP 1.6 & above
○ Vantiv Worldpay	▪ PCI DSS
	▪ Data at Rest Security - FIPS 140.2

EvGateway operates 24x7 helpdesk from Global location including HQ Irvine(California, US), Mexico and India with multilingual language support. The support team has expertise on basic and advanced diagnosis on the charger hardware and operations and network platform, payment gateway operations etc.

The subsequent sections of the proposal detail the features and approach methodology of the EvGateway. Please go through remaining details of this proposal for more details regarding our White Labeled offerings.

CPO SOLUTION SERVICES

Site Planning & Design

Hardware Procurement

Site Permits and Construction

Revenue Management Operator

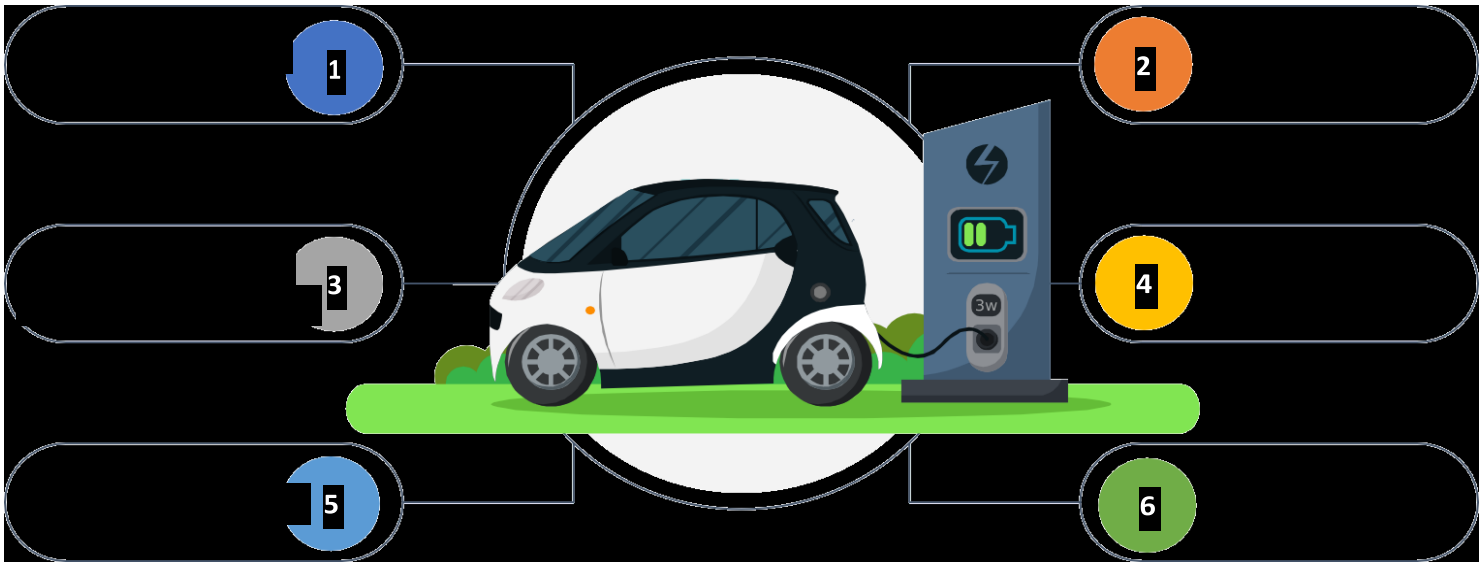
Charger Configuration & Commissioning

Charger Installation

Network Management and 24x7 Support

Maintenance and Warranty

TURNKEY SOLUTION PROCESS



EVGATEWAY

Edison

Item #	Manufacturer Part number	Description	Qty	Unit Price	Total
1	UP-160J-PMP	Tellus Power Level-2 Dual Pedestal Charger ; 2 x 7.2kW , J1772 ; 2 Years Standard Warranty ;	8	$ 2,850.00	$ 22,800.00
2	EVG-CMSN-DC-AC	One-time set up fee for DC and AC Chargers	8	$ 100.00	$ 800.00
			Total One Time		$ 23,600.00
3	Warranty	Warranty - After 2 years / year	8	$ 200.00	$ 1,600.00
4	Maintenance	Maintenance – Break / Fix onsite	8	$ 200.00	$ 1,600.00
4	EVG-SAAS-AC	EvGateway Network Services for AC Charger / Port / Year	16	$ 150.00	$ 2,400.00
			1st 2 years / yearly fees		$ 4,200.00
			Fees / year after 2 years / year		$ 5,600.00

Special Notes and Instructions
**Shipping is not included
***Advanced Payment required to process Purchase Order
*Assumes All Construction & Electrical Are Completed.

ONE TIME	$ 23,600.00
1st 2 years / yearly fees	$ 4,200.00
Fees / year after 2 years / year	$ 5,600.00

Electric Vehicle Chargers – AC

A-75

Suburban
Water Systems
A SouthWest Water Company

1325 N. Grand Avenue
Suite 100
Covina, CA 91724-4044
Phone: 626/543-2500
Fax: 626/331-4848
www.swwc.com

PROJECT DESIGN REPORT

FROM: Engineering Department
DATE: September 19, 2022
DISTRICT: San Jose & Whittier/La Mirada District
SUBJECT: 2025 Electrical Vehicle Purchase: CP-492

Introduction

To improve fuel efficiency, reduce customers' operating costs, and reduce greenhouse gas emissions and resulting carbon footprint, Suburban will purchase hybrid trucks and electric trucks. In 2025, twelve (12) vehicles will be purchased.

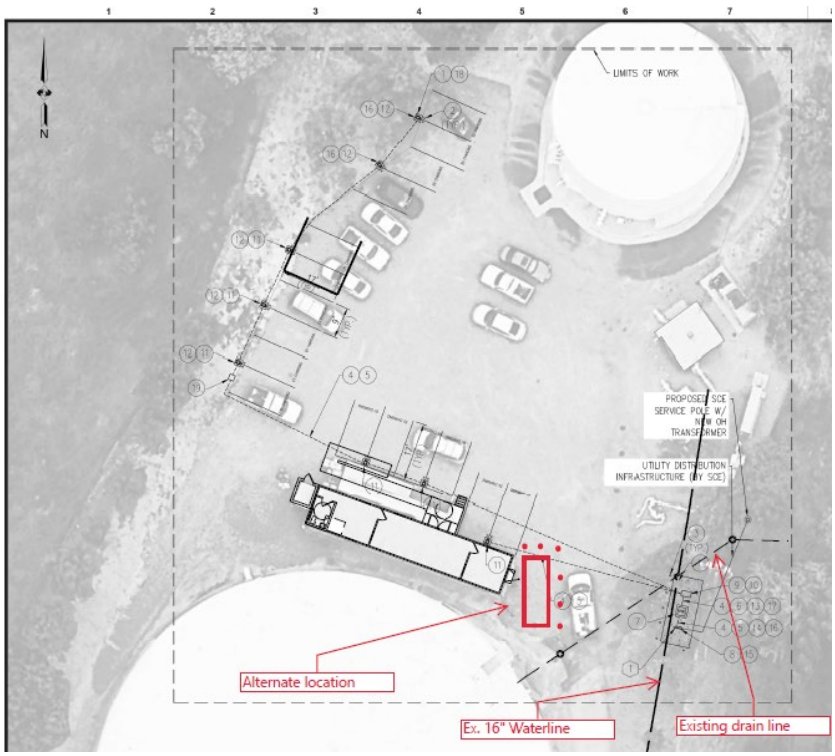
Three (3) of these vehicles, all internal combustion engines, will be replaced due to mileage exceeding the replacement mileage threshold of 120,000 miles. Nine (9) of the vehicles will be new vehicles added to the fleet for on-call staff.

New vehicles added to the fleet for on-call purposes are necessary to ensure emergency service can be provided to customers and minimize water supply disruption. Purchased vehicles will be either hybrid or electric to reduce customer costs and support the PUC's ESJ goals related to climate change.

Background

Electric Charging Station Infrastructure

Electric vehicle batteries need to be charged with charging stations. Planning with the SCE EV charging station team determined that Plant 132 has sufficient space to construct charging infrastructure that includes eight (8) dual-outlet charging stations to accommodate the sixteen electric vehicles used by the Field Services department. The following preliminary site plan shows the location of the charging stations.



SCE has initiatives to encourage customers to use electric vehicles in place of internal combustion engine (ICE) driven vehicles. SCE has a program that pays for the installation of charging station infrastructure, leaving the customer to purchase the charging station equipment. It is prudent and financially beneficial to Suburban customers to install the infrastructure before these initiatives expire. Suburban and SCE entered into an agreement to install charging station facilities by the end of 2023 which also aligns with Suburban's EV purchases. Taking advantage of SCE's initiative saves Suburban's customers the installation cost of the electrical infrastructure. The cost to purchase eight duo pedestals is $23,600. The vendor's quote is included in the appendix.

Project Justification

Replacement Mileage Threshold

Suburban replaces utility vehicles that meet or exceed replacement mileage thresholds consistent with the Department of General Services (DGS), which the CPUC approved for California Water Service in Decision D.07-12-055 (December 20, 2007). The DGS policy replaces vehicles after 120,000 miles or earlier if it is cost-effective, regardless of mileage.

On-call Staff

In 2019, the emergency leak response on-call program was expanded to include more staff to ensure adequate emergency coverage. An expanded on-call program ensures enough operators are available to respond to emergencies. In the past, a limited number of employees would respond and added a lot of time getting a hold of responders. The expanded program has been successful, and customers benefit from improved response time. Some of the staff added to the on-call program are assigned to larger vehicles such as dump trucks and valve trucks. Larger vehicles are not suitable to be driven and parked at their residences and therefore require additional vehicles to support the program. Vehicles replaced due to exceeding mileage thresholds were required to be kept in the fleet and utilized by the added on-call employees.

Environmental and Social Justice Goals

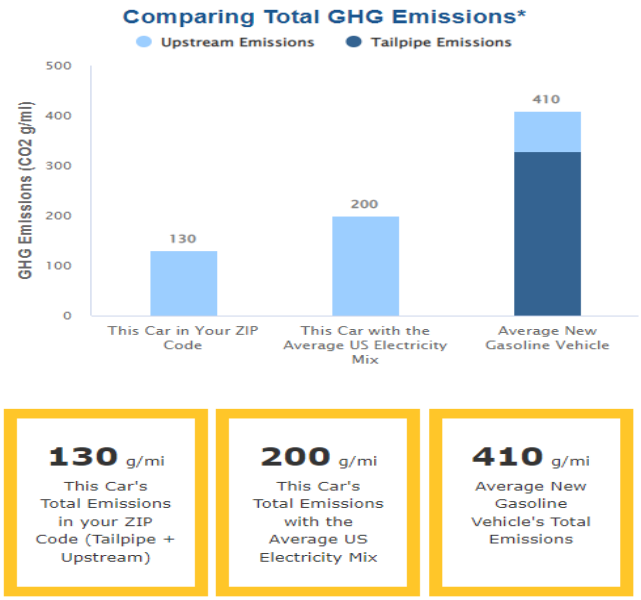
The transportation sector contributes 83% of oxides of nitrogen emissions, 95% of diesel particulate matter, and nearly 35% of statewide greenhouse gas emissions. Suburban intends to transition to an electric vehicle fleet to support PUC's ESJ initiatives.

In response to the California Public Utilities Commission (CPUC) Environmental and Social Justice (ESJ) goals, Suburban will replace Internal Combustion Engine (ICE) vehicles with Zero Emission Vehicles (ZEV), and hybrid vehicles to reduce carbon emissions in the communities that it serves. Investing in ZEV's and hybrids directly support CPUC's ESJ Goal #2 to invest in clean energy resources that benefit ESJ communities by improving air quality and public health. Greenhouse emissions and the resulting pollution and global warming effects are issues affecting all Californians.

ZEVs are powered by electricity resulting in significantly less carbon emissions than are generated by an equivalent ICE vehicle. Figure 1 (**Workpaper III-B)** from the U.S. Department of Energy shows the average emissions of an ICE truck operating in Covina, CA

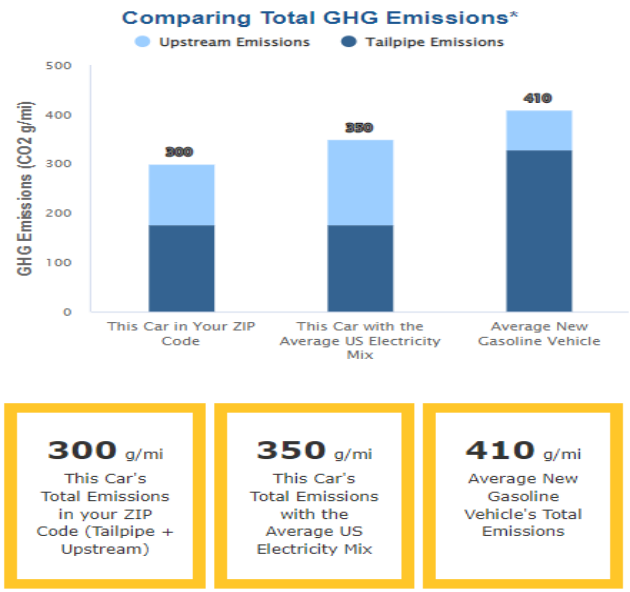
produces a total emission of 410 grams per mile. The total emissions from an electric truck is 130 grams per mile, less than one-third of ICE vehicle. The total emissions are determined by summing the emissions generated from operating the vehicle, producing the energy source, and transporting and distributing the energy source.

Figure 1



Hybrid vehicles use a combination of electric batteries and motors with a gas engine to dramatically increase fuel efficiency. Hybrids produce significantly less carbon emissions than inefficient ICE vehicles. The U.S. Department of Energy determined (Figure 2 shown on Workpaper III-B, A-75) the average new ICE truck emission in Covina,CA is 410 grams per mile versus the total emissions from a hybrid vehicle at 300 grams per mile. The total emissions are determined by summing the emissions generated from operating the vehicle, producing the energy source, and transporting and distributing the energy source.

Figure 2



Continuing the use of ICE vehicles does nothing to reduce carbon emissions. According to the U.S. Department of Energy, 1.6 million tons of greenhouse gases are released annually.

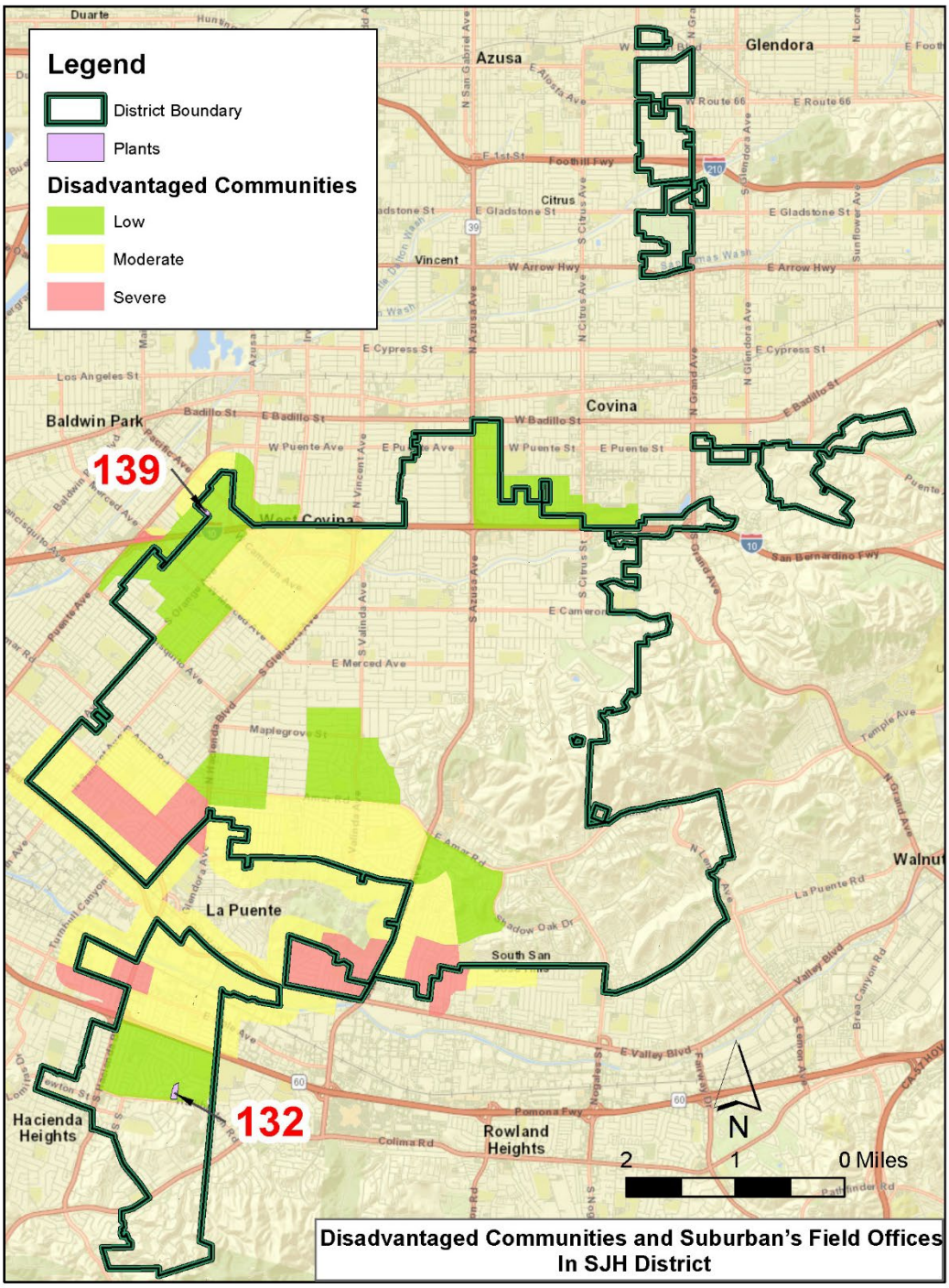
Table 1 below shows that on average a Suburban truck is driven approximately 730 miles a month, releasing 410 grams of carbon dioxide per mile. The calculation determined that ten (10) ICE trucks generate about 6,600 pounds of carbon dioxide a month. Suburban's plan to purchase nine (9) electric and three (3) hybrid trucks will reduce carbon dioxide emissions by 4,587 pounds per month, or 55,041 pounds per year. The Washington Post (https://www.washingtonpost.com/health/california-is-ahead-of-other-states-in-cutting-carbon-emissions-report-says/2020/07/24/0af96632-cc73-11ea-b0e3-d55bda07d66a_story.html) reports that the average house in Los Angeles County produces 2.83-tons of carbon dioxide each year. Suburban's plan will eliminate the equivalent carbon footprint of ten homes.

Table 1 - Greenhouse Gas Emissions (Reduction)

Year	2024	
	Month	Annual
Miles	8,760	105,120
Total CO2 Produced - Gas (Lbs)	7,918	95,018
grams CO2/mile - Gas	410	
grams CO2/mile - EV	130	
grams CO2/mile - Hybrid	300	
Delta (grams CO2/mile) - Gas & EV	280	280
Delta (grams CO2/mile) - Gas & Hybrid	110	110
CO2 Reduction (grams) - EV	130	22,075,200
CO2 Reduction (grams) - Hybrid	300	2,890,800
Total CO2 Reduction (grams)	280	24,966,000
Total CO2 Reduction (Lbs)	110	55,041
LA County Average House - CO2	130	10

The conversion of the Field Services fleet from ICE to EV and hybrid supports CPUC's ESJ initiatives. Emissions reductions benefits all of Suburban's customers, and most importantly the neighborhood adjacent to Plant 132 which is classified as a disadvantaged community. The California Office of Environmental Health Hazard Assessment (OEHHA) map shows that Plant 132 is in disadvantaged community (**Figure 3 shown on Workpaper III-B, A-75**).

Figure 3 – Plant 132 Proximity to Disadvantaged Communities



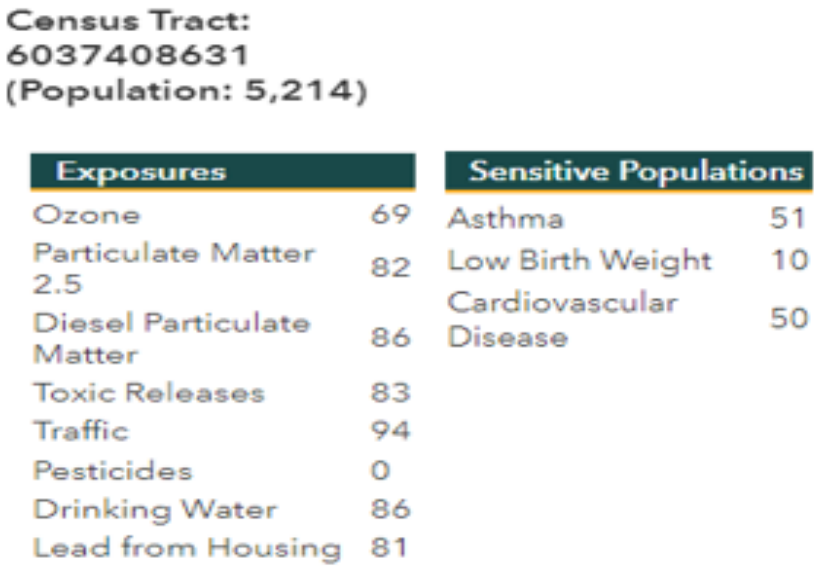
A disadvantaged community is an area in California that suffers disproportionately from economic, health and environmental burdens. These burdens include poverty, high unemployment, air and water pollution, hazardous waste, and a high incidence of asthma and heart disease. Environmental and social justice seeks to come to terms with and

remedy a history of unfair treatment of communities, predominantly communities of people of color, and low-income residents. These communities have been subjected to disproportionate impacts from one or more environmental hazards, socioeconomic burdens, or both.

In performing their daily duties, Suburban Field Services members drive throughout disadvantaged communities. Use of EV and hybrid vehicles reduces the hazardous environmental exposures impacting these communities. **Figure 4 (Workpaper III-B, A-75)** shows the environmental hazards that residents are exposed to including ozone, particulate matter, diesel particulate matter, and toxic release. (https://oehha.ca.gov/calenviroscreen/scoring-model), (https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40).

Transitioning to an electric and hybrid fleet reduces environmental hardships of the surrounding community by improving air quality.

Figure 4 - Disadvantage Community (Exposures)



Census Tract: 6037408631 (Population: 5,214)

Exposures	
Ozone	69
Particulate Matter 2.5	82
Diesel Particulate Matter	86
Toxic Releases	83
Traffic	94
Pesticides	0
Drinking Water	86
Lead from Housing	81

Sensitive Populations	
Asthma	51
Low Birth Weight	10
Cardiovascular Disease	50

In summary, the transition to EV and hybrid vehicles reduces Suburban's carbon footprint and furthers the CPUC ESJ Goal # 2 to increase investment in clean energy resources to benefit ESJ communities, especially to improve local air quality and public health

Customer Cost Savings

Fuel Cost

Suburban proposes to purchase nine (9) Ford F150 Lightning electric pickup trucks and three (3) hybrid Ford F-150s in 2025. Replacing vehicles with EVs and Hybrids instead of ICE will increase the CAPEX cost by approximately $147,038.

Table 2 below illustrates the estimated fuel expenses for ICE vehicles as compared to EV and Hybrid vehicles, the cost difference for the EV alternative and the fuel savings. Transitioning to electric and hybrid vehicles is a more cost-effective solution for Suburban's vehicle fleet. A detailed cost benefit analysis is included in the appendix.

Internal Rate of Return (IRR) - IRR is a metric used in financial analysis to estimate the benefit of potential investments. IRR is the discount rate that makes the net present value (NPV) of all cash flows equal to zero in a discounted cash flow analysis. A positive IRR means that a project or investment is expected to return value to the customers. The higher the IRR, the more desirable an investment is to make.

The project's 22.1% IRR demonstrates that customers benefit from purchasing EV's and hybrids as compared to purchasing ICE vehicles. A detailed cost-benefit analysis is included in this report.

Cost Analysis

Table 2 – Mileage and Fuel Consumption

Department	Replacement (ICE)	Replacement (Alternative)	Cost (Alternative)	Cost Difference	Fuel Cost Savings
SJH Construction	F150	F150 - Electric	$79,470.96	$11,785.20	$3,135
Water Quality	Ranger	F150 - Electric	$79,470.96	$23,124.72	$2,194
WLM Construction	F150	F150 - Electric	$79,470.96	$11,785.20	$3,135
SJH Construction	F150	F150 - Electric	$79,470.96	$11,785.20	$3,135
Production	F150	F150 - Electric	$79,470.96	$11,785.20	$3,135
WLM Construction	F150	F150 - Hybrid	$70,003.32	$2,317.57	$2,410
WLM Construction	F150	F150 - Hybrid	$70,003.32	$2,317.57	$2,410
Water Quality	F150	F150 - Hybrid	$70,004.32	$2,317.57	$2,410
WLM Construction	F150	F150 - Electric	$79,470.96	$11,785.20	$3,135
Engineering	Ranger	F150 - Electric	$79,470.96	$23,124.72	$2,194
SJH Construction	F150	F150 - Electric	$79,471.96	$11,785.20	$3,135
Water Quality	Ranger	F150 - Electric	$79,470.96	$23,124.72	$2,194
			$925,250.57	**$147,038**	**$32,624**
Assumptions:					
average annual mileage of 8,760					
fuel cost of $4.57/gallon					
electricity cost of $0.21/kWh					

Alternatives

Alternative 1 – Purchase ICE vehicles to replace those exceeding mileage. No added vehicles to the fleet.

This alternative continues the use of ICE vehicles with high carbon emissions and does nothing to further the CPUC's ESJ goals. This alternative does not address the adverse health impacts on customers in disadvantaged communities from pollution discharged by ICE vehicles and Suburban's overall carbon footprint resulting from greenhouse gas emissions from vehicles.

In addition, this alternative results in a higher fuel costs for Suburban's customers.

Lastly, this alternative will expose customers to longer service interruptions due to the insufficient vehicles available for on-call staff. On-call staff need vehicles to drive home in order to respond to emergencies as quickly as possible. On-call staff are currently using

vehicles execceding mileage threshold that are not reliable and cannot be depended on to respond to emergency calls.

This is alternative is not recommended.

Alternative 2 – Replace vehicles exceeding mileage and Add to Fleet with ICE Trucks

This alternative continues the use of ICE vehicles with high carbon emissions and does nothing to further the CPUC's ESJ goals. This alternative does not address the adverse health impacts on customers in disadvantaged communities from pollution discharged by ICE vehicles and Suburban's overall carbon footprint resulting from greenhouse gas emissions from vehicles.

In addition, this alternative results in a higher fuel costs for Suburban's customers.

However, this alternative will provide additional vehicles for on call staff to drive home to ensure expeditious response to emergencies. Added vehicles will function reliably and ensure service interruptions to customers are minimized.

This is alternative does not address CPUC’s ESJ Goals and is not the recommended alternative.

Alternative 3 - Replace vehicles exceeding mileage and Add to the Fleet with EV Trucks and Charging Stations, and Hybrids –

The recommended alternative is to replace vehicles exceeding mileage threshold, purchase additional vehicles for on-call staff and to select electric and hybrid vehicles to replace internal combustion engine vehicles in Suburban's fleet in 2025.

This alternative supports CPUC's ESJ Goal #2 by reducing the impact of pollution in a disadvantaged community, reducing Suburban's carbon footprint, and provides cost savings for customers and will ensure customer service interruptions are minimized. This is the recommended alternative.

Appendix 1 – Cost Benefit Analysis

Date	Year	Net Gross Multiplier	Fuel Cost ($/yr)	Electric Charging Cost ($/yr)	Cost Difference ($/yr)	Total Savings ($)	Annual Revenue Requirement	Years after EV purchase	Benefit (Cost) To Customers (annual)	Benefit (Cost) To Customers (cumulative)	NPV Benefit (Cost) To Customers (annual)	NPV Benefit to Customer (Cumulative)
									Discount Rate	22.116%		
									NPV Of Future Benefits (Costs) To Customers	(0)		
7/1/2025	2024/2025	1.00	50,194.00	13,315.00	-36,879.00	0	-	1	0	-	-	-
7/1/2026	2025/2026	1.00	50,194.00	13,315.00	-36,879.00	32,624	36,854	2	(4,230)	(4,230)	(2,837)	(2,837)
7/1/2027	2026/2027	1.00	50,194.00	13,315.00	-36,879.00	32,624	35,464	3	(2,840)	(7,071)	(1,560)	(4,396)
7/1/2028	2027/2028	1.00	50,194.00	13,315.00	-36,879.00	32,624	34,075	4	(1,451)	(8,521)	(652)	(5,049)
7/1/2029	2028/2029	1.00	50,194.00	13,315.00	-36,879.00	32,624	31,540	5	1,084	(7,438)	399	(4,650)
7/1/2030	2029/2030	1.00	50,194.00	13,315.00	-36,879.00	32,624	29,769	6	2,855	(4,583)	861	(3,789)
7/1/2031	2030/2031	1.00	50,194.00	13,315.00	-36,879.00	32,624	27,998	7	4,626	44	1,142	(2,646)
7/2/2031	2030/2032	1.00	50,194.00	13,315.00	-36,879.00	32,624	26,226	8	6,398	6,441	1,294	(1,353)
7/3/2031	2030/2033	1.00	50,194.00	13,315.00	-36,879.00	32,624	24,455	9	8,169	14,610	1,353	0

Description of Capital Improvement	2022	2023	2024	2025
Cost Difference to purchase EV		-	147,038	
Total		0.00	147,038.00	0.00
Fuel Savings		0	32,624	

	Total	Annual Reveue Requirement
	-	-
	36,854	- 36,854
	35,464	- 35,464 -
	34,075	- 34,075 -
	31,540	- 31,540 -
	29,769	- 29,769 -
	27,998	- 27,998 -
	26,226	- 26,226 -
	24,455	24,455 -

Authorized Rate of Return by asset

	2025	2026	2027	2028	2029	2030	2031	2032	2033	3	4	5
Electric Vehi	0	1	2	3	4	5	6	7	8			
Long Term D	2.21%	2.21%	2.21%	2.21%	2.21%	2.21%	2.21%	2.21%	2.21%			
Preferred St	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%			
Common Eq	5.55%	5.55%	5.55%	5.55%	5.55%	5.55%	5.55%	5.55%	5.55%			
Gross Retur	**7.85%**	**7.85%**	**7.85%**	**7.85%**	**7.85%**	**7.85%**	**7.85%**	**7.85%**	**7.85%**			
Depreciatior	0.00%	-0.95%	-1.89%	-2.84%	-3.78%	-4.73%	-5.67%	-6.62%	-7.56%			
Net Return	**7.85%**	**6.91%**	**5.96%**	**5.02%**	**4.07%**	**3.13%**	**2.18%**	**1.24%**	**0.29%**			
Income Tax	2.16%	2.16%	2.16%	1.38%	1.12%	0.86%	0.60%	0.34%	0.08%			
Depreciatior	12.03%	12.03%	12.03%	12.03%	12.03%	12.03%	12.03%	12.03%	12.03%			
2019 UF Sur	1.43%	1.43%	1.43%	1.43%	1.43%	1.43%	1.43%	1.43%	1.43%			
Uncollectible	0.45%	0.45%	0.45%	0.45%	0.45%	0.45%	0.45%	0.45%	0.45%			
Franchise Fe	1.14%	1.14%	1.14%	1.14%	1.14%	1.14%	1.14%	1.14%	1.14%			
Authorized I	**25.06%**	**24.12%**	**23.17%**	**21.45%**	**20.25%**	**19.04%**	**17.84%**	**16.63%**	**15.43%**			