

1 [Administrative, Environment Codes - Zero Emission Vehicle Requirements for City Fleet]

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3 Ordinance amending the Administrative and Environment Codes to require that any
4 new passenger vehicle procured for the City fleet be a Zero Emission Vehicle, absent a
5 waiver, and that all passenger vehicles in the City fleet be Zero Emission Vehicles by
6 December 31, 2022; and to encourage selection of Zero Emission Vehicles in other
7 vehicle classes as technology improves.

8 NOTE: Unchanged Code text and uncodified text are in plain Arial font.
9 Additions to Codes are in *single-underline italics Times New Roman font*.
10 Deletions to Codes are in *strikethrough italics Times New Roman font*.
11 Board amendment additions are in double-underlined Arial font.
12 Board amendment deletions are in ~~strikethrough Arial font~~.
13 Asterisks (* * * *) indicate the omission of unchanged Code
14 subsections or parts of tables.

15 Be it ordained by the People of the City and County of San Francisco:

16 Section 1. The Administrative Code is hereby amended by revising Section 4.10-1, to
17 read as follows:

18 **SEC. 4.10-1. CITY-OWNED AND LEASED VEHICLES; FLEET MANAGEMENT**
19 **PROGRAM.**

20 * * * *

21 (c) By December 31, 2020, all light duty vehicles in the City fleet must be Zero Emission
22 Vehicles in compliance with Environment Code Section 404, unless there is a waiver, exemption, or
23 applicable exception, detailed in Environment Code Chapter 4.

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1 Section 2. The Environment Code is hereby amended by revising Sections 401, 403,
2 and 404, to read as follows:

3 **SEC. 401. DEFINITIONS.**

4 "Alternative Fuel With Low Carbon Intensity" means any transportation fuel that is
5 less polluting than gasoline or petroleum diesel fuel, as determined by the California Air
6 Resource Board and that is shown to have lower lifecycle carbon emissions than gasoline or
7 petroleum diesel. Alternative Fuels with Low Carbon Intensity may include, but are not limited
8 to: natural gas; propane; biofuels from low carbon, sustainable and preferably local sources;
9 hydrogen produced from low carbon and/or renewable sources; and electricity.

10 "Alternative Fuel Vehicle" means any motor vehicle powered by alternative fuel
11 with low carbon intensity.

12 "Bus" means any passenger vehicle with a seating capacity of more than ~~fifteen~~ (15)
13 persons.

14 "City" means City and County of San Francisco.

15 "City Administrator" means the City Administrator, or his or her designee.

16 "Department" means any officer, board, commission, department or other division of
17 the City and County of San Francisco. Department does not include the San Francisco Unified
18 School District, the San Francisco Community College District, the San Francisco Office of
19 Community Investment and Infrastructure, or the San Francisco Housing Authority or any
20 other local, State, or Federal agency.

21 "Emergency Vehicle" means any vehicle publicly owned and operated that is used
22 by a public safety officer for law enforcement purposes, fighting fires or responding to
23 emergency fire calls, or used by emergency medical technicians or paramedics for official
24 purposes. For purposes of this Chapter 4, "Emergency Vehicle" shall also mean any vehicle
25 used by the Office of the Chief Medical Examiner or the Department of Animal Care and

1 Control for official duties. Unless equipped with lights and sirens, vehicles used for primarily
2 administrative functions such as passenger transport shall not be considered an "Emergency
3 Vehicle" for the purposes of this Chapter 4.

4 "General Passenger Van" means a Passenger Vehicle that meets the criteria of a
5 Federal Highway Administration Class 3 Vehicle that is not a pick-up.

6 "Greenhouse gas (GHG) or greenhouse gas emissions" means and includes all
7 of the following gases: carbon dioxide, methane, and nitrous oxide. The City Administrator, in
8 consultation with the Department of the Environment, shall determine the method by which
9 these emissions shall be measured.

10 "Light-Duty Passenger Vehicle" means a Passenger Vehicle that meets the
11 criteria of a Federal Highway Administration Class 2 Vehicle that include all sedans, coupes
12 and station wagons primarily for the purposes of carrying passengers, and comprising of no
13 more than 5 seats in addition to the driver's seat.

14 "Light-Duty Truck" means any motor vehicle, with a manufacturer's gross vehicle
15 weight rating of 8,500 pounds or less, that is designed primarily for purposes of transportation
16 of property or is a derivative of such a vehicle, or is available with special features enabling
17 off-street or off-highway operation and use.

18 "Motor Vehicle" means a self-propelled vehicle.

19 "Passenger Vehicle" means any motor vehicle designed primarily for transportation
20 of persons and with a design capacity of ~~twelve~~ (12) persons or less.

21 "Plug-In Hybrid Electric Vehicle" means a vehicle with both an electric motor and a
22 gasoline engine, as determined by the California Air Resources Board. It can be fueled using
23 both electricity and gasoline.

24 "Public Safety Department" means the Police Department, the Sheriff's
25 Department, and the Fire Department. For purposes of this Chapter 4, "Public Safety

1 Department" shall also include the Office of the Chief Medical Examiner and the Department
2 of Animal Care and Control.

3 "Purchase" means to buy, lease, or otherwise acquire the right to use.

4 "Remove from service" means to complete filings with the California Department of
5 Motor Vehicles either to remove the City as the motor vehicle owner permanently, or to
6 register the motor vehicle as non-operational for the relevant fiscal year.

7 "Vehicle Selector List" means a document issued by the City Administrator, in
8 consultation with the Department of the Environment, which provides emissions data for Light-
9 Duty Passenger Vehicles ~~general purpose sedans, light-duty pickup trucks, and vans with a~~
10 gross vehicle weight under 8,500 pounds. The Vehicle Selector List will consider estimated
11 long-term costs and emissions, and when Zero Emission Vehicles are unavailable in the
12 marketplace, identify vehicles that have emissions as low as practicable and efficiency ratings
13 as high as practicable.

14 "Zero Emission Vehicle" means a vehicle that produces no emissions from the on-board
15 source of power, as determined by the California Air Resources Board.

16
17 **SEC. 403. FLEET MANAGEMENT PROMOTING HEALTHY AIR AND CLEAN**
18 **TRANSPORTATION.**

19 * * * *

20 (b) **Optimizing Fleet Management.** To help the City achieve its air pollution and
21 greenhouse gas reduction goals, and promote the effective, efficient, and safe use of all
22 general purpose, light-duty vehicles owned, leased, or rented by the City, the City
23 Administrator will adopt and implement policies to:

24 (1) Optimize the size and utilization of the City's general purpose, light-duty fleet,
25 with emphasis on right-sizing the fleet and eliminating unnecessary or non-essential vehicles;

1 (2) Use technology such as telematics and vehicle assignment systems, to the
2 furthest extent practicable, to promote the safe use of vehicles, minimize environmentally
3 harmful practices such as excessive vehicle idling, and reduce underutilization of vehicles;

4 (3) Align greenhouse gas reduction goals with the Federal Executive Order –
5 Planning for Federal Sustainability in the Next Decade, dated March 19, 2015 – reducing
6 average per-mile greenhouse gas emissions from general purpose, light-duty fleet vehicles,
7 relative to a baseline of emissions in fiscal year 2014, to achieve the following percentage
8 reductions: (A) not less than 4% percent by the end of fiscal year 2017; and (B) not less than
9 15% percent by the end of fiscal year 2021;

10 (4) Ensure that the composition of the City's general Light-Duty Passenger Vehicle
11 fleet is entirely Zero Emission Vehicles consistent with Section 404 by December 31, 2020~~2~~, and seek
12 out new and emerging technologies to upgrade the City's other fleet classes such as trucks and vans to
13 zero emission standards; and

14 (4~~5~~) Conduct a review one year after the initial implementation of these policies,
15 and every year thereafter, to assess telematics data, review developments in low carbon
16 fuels, evaluate possible coverage of additional vehicle classes, evaluate additional GHG
17 goals, explore new technologies allowing for conversion of light-duty trucks and general passenger
18 vans to Zero Emission Vehicle status, and other topics the City Administrator deems are relevant,
19 to serve as a basis for the City Administrator, in consultation with the Director of the
20 Department of the Environment, to adopt and implement further policy changes regarding fleet
21 management as appropriate. The City Administrator shall submit an annual report to the
22 Board of Supervisors and the Mayor outlining the findings of this annual review, possible
23 upgrade opportunities with regard to vehicle emissions for light-duty trucks and general passenger
24 vans, and any additional resulting policy changes in fleet management, including
25 recommendations for mandatory fleet reductions if warranted.

1 **SEC. 404. NEW OR REPLACEMENT MOTOR VEHICLES.**

2 (a) Unless granted a waiver under Section 404(b) or exempt under ~~sub~~Section
3 404(c), City officials may not purchase or authorize the purchase of any motor vehicle unless
4 the purchase complies with each of the following:

5 (1) The purchase complies with the Transit-First policy required under Section
6 403(a) and adopted by the department or City official for whose use the vehicle is principally
7 intended;

8 ~~(2) A general purpose sedan or other similarly sized vehicle~~ Light-Duty Passenger
9 Vehicle requested for purchase or lease is a Zero Emission Vehicle;

10 ~~(32) A passenger vehicle or light-duty truck or general passenger van~~ requested for
11 purchase is an approved make and model under the applicable Vehicle Selector List; and,

12 ~~(43)~~ The motor vehicle requested for purchase meets all applicable safety
13 standards and other requirements for the intended use of the vehicle.

14 (b) **Waivers.** The City Administrator may waive the requirements of Section 404(a)
15 where he or she finds that

16 (1) there is no passenger vehicle or light-duty truck approved by the Vehicle
17 Selector List that meets all applicable safety standards and other requirements for the
18 intended use of the motor vehicle; or

19 (2) the passenger vehicle or light-duty truck will be used primarily outside of the
20 geographic limits of the City and County of San Francisco in location(s) which lack required
21 fueling or other infrastructure required for a complying motor vehicle; or

22 ~~(3) the passenger vehicle or light-duty truck would be required to be a Zero Emission~~
23 Vehicle, but the most common intended use for the vehicle will require it to regularly travel distances of
24 more than 100 miles without being able to use a charging station.

1 Waivers must be made in a fashion as to ensure that only the minimum number of vehicles
2 not in compliance with Section 404(a) needed by a department remain in the fleet. Departments may
3 submit one single waiver request to cover the annual purchases. waiver do not need to be
4 submitted on an individual purchase basis. As part of his or her annual report to the Board of
5 Supervisors and the Mayor under Section 403(b)(4), the City Administrator shall report on the
6 number of new waivers granted under this subsection (b) for the prior year.

7 (c) **Exemptions.** This Section 404 shall not apply in the following circumstances:

8 (1) To the purchase of Emergency Vehicles where the Public Safety
9 Department concludes, after consultation with the City Administrator, that the purchase of a
10 complying vehicle is not feasible or would otherwise unduly interfere with the Department's
11 public safety mission.

12 (2) To the acquisition of buses by the San Francisco Municipal Transportation
13 Authority for public transportation purposes.

14 (3) To any purchase necessary to respond to an emergency that meets the criteria
15 set in Administrative Code Sections 21.15(a) or 6.60. In such cases, the department shall, to
16 the extent feasible under the circumstances, acquire the noncomplying vehicles only for a
17 term anticipated to meet the emergency need. Any City department invoking this exemption
18 shall promptly notify the City Administrator, in writing, of the purchase and the emergency that
19 prevented compliance with this section.

20 (4) At any time, up to 10 percent of the total Light Duty Passenger Vehicle fleet
21 may exempted from the requirements of Section 404(a)(2) if the alternate vehicles are Plug-In
22 Hybrid Electric Vehicles instead.

23 (5) Wherever the purchase of a passenger vehicle or light-duty truck is exempt from
24 the requirements of this section, City departments and officials shall select a vehicle with as
25 low emissions and high efficiency ratings as practicable.

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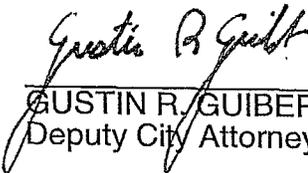
Section 3. Effective Date. This ordinance shall become effective 30 days after enactment. Enactment occurs when the Mayor signs the ordinance, the Mayor returns the ordinance unsigned or does not sign the ordinance within ten days of receiving it, or the Board of Supervisors overrides the Mayor's veto of the ordinance.

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1 Section 4. Scope of Ordinance. In enacting this ordinance, the Board of Supervisors
2 intends to amend only those words, phrases, paragraphs, subsections, sections, articles,
3 numbers, punctuation marks, charts, diagrams, or any other constituent parts of the Municipal
4 Code that are explicitly shown in this ordinance as additions, deletions, Board amendment
5 additions, and Board amendment deletions in accordance with the "Note" that appears under
6 the official title of the ordinance.
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9 APPROVED AS TO FORM:
10 DENNIS J. HERRERA, City Attorney

11 By:


12 GUSTIN R. GUIBERT
13 Deputy City Attorney

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LEGISLATIVE DIGEST

[Administrative, Environment Codes - Zero Emission Vehicle Requirements for City Fleet]

Ordinance amending the Administrative and Environment Codes to require that any new passenger vehicle procured for the City fleet be a Zero Emission Vehicle, absent a waiver, and that all passenger vehicles in the City fleet be Zero Emission Vehicles by December 31, 2022; and to encourage selection of Zero Emission Vehicles in other vehicle classes as technology improves.

Existing Law

The City Administrator and Departments are restricted in purchasing motor vehicles considered light duty or passenger in nature to the Vehicle Selector List issued by the City Administrator. Light duty or passenger vehicles include passenger vehicles (generally sedans), light duty trucks, and passenger vans. The purchasing restrictions do not apply when the City Administrator waives the requirements, or the purchase is exempt. The Vehicle Selector List takes into account environmental considerations with the goal of purchasing vehicles that reduce Greenhouse Gas Emissions.

Amendments to Current Law

The City Administrator and Departments will be restricted to only Zero Emission Vehicles when purchasing new passenger vehicles. Light-Duty Passenger Vehicles have been defined to align with federal standards for class 2 vehicles. The definition of Emergency Vehicles has been narrowed to eliminate vehicles used primarily for administrative functions that are not equipped with sirens and lights.

By December 31, 2022, the entire passenger vehicle fleet must transition to consist of entirely Zero Emission Vehicles, unless there is a waiver, exemption, or exception present in Chapter 4 of the Environment Code. Light duty trucks and passenger vans will not be required to be Zero Emission Vehicles, but as technology improves, selection of Zero Emission Vehicles will be encouraged. The purchasing restrictions do not apply when the City Administrator waives the requirements, and departments do not need to submit waivers on a purchase by purchase basis. Some purchases are exempt from the Zero Emission Vehicle requirements, such as Emergency Vehicles. Up to 10 percent of the Light-Duty fleet does not have to be a Zero Emission Vehicle if they are instead Plug-In Hybrid Vehicles.

Background Information

To be considered a Zero Emission Vehicle ("ZEV"), the vehicle must be defined as such by the California Air Resources Board. Generally, this requires that a vehicle produce no emissions from the on-board source of power.

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<p>Item 4 File 17-0210</p>	<p>Department: Office of the City Administrator</p>
<p>EXECUTIVE SUMMARY</p>	
<p style="text-align: center;">Legislative Objectives</p>	
<ul style="list-style-type: none"> • Ordinance amending the City’s Administrative and Environment Codes to require that any new passenger vehicles and light duty trucks procured for the City fleet be a Zero Emission Vehicle, such that all light duty vehicles in the City’s fleet are Zero Emission Vehicles by December 31, 2020, unless a waiver is obtained, and encouraging selection of Zero Emission Vehicles in other vehicle classes as technology improves. 	
<p style="text-align: center;">Key Points</p>	
<ul style="list-style-type: none"> • A Zero Emission Vehicle is a vehicle that produces no emissions from the on-board source of power, as determined by the California Air Resources Board. • The ordinance provides exemptions for (a) emergency vehicles if the purchase of Zero Emission emergency vehicles is not feasible or would otherwise interfere with the department’s public safety mission, (b) Municipal Transportation Authority buses, (c) response to emergency needs, and (d) If exempt from the requirements, a vehicle is selected with as low emissions and high efficiency ratings as practicable. 	
<p style="text-align: center;">Fiscal Impact</p>	
<ul style="list-style-type: none"> • This ordinance would necessitate the replacement of between 759 and 1,550 existing passenger vehicles with Zero Emissions Vehicles by December 2020 at a total cost of between \$20,872,500 (759 vehicles x \$27,500 per vehicle for the Smart Electric Drive) to \$72,307,500 (1,550 vehicles x \$46,650 for the BMWi3) over the next two and a half years. • The average cost of installing a level-two charger is \$16,000. To install between 636 and 1,427 chargers will cost between \$10,176,000 and \$22,832,000. • The total estimated initial cost to purchase between 759 and 1,550 new electric passenger vehicles and install between 636 and 1,427 electric chargers would range from \$31,048,500 to \$95,139,500. Additional costs would be incurred for the operation, maintenance and replacement of the electric vehicles and charging stations. 	
<p style="text-align: center;">Policy Consideration</p>	
<ul style="list-style-type: none"> • There are various policy and implementation issues to consider with the proposed ordinance, including the (a) expedited 2020 deadline, (b) lease and grant unknowns, (c) issues arising from operational needs and (d) aligning of City goals. 	
<p style="text-align: center;">Recommendation</p>	
<ul style="list-style-type: none"> • Approval of the proposed ordinance is a policy decision for the Board of Supervisors. 	

MANDATE STATEMENT

According to Charter Section 2.105, all legislative acts shall be by ordinance and require the affirmative vote of at least a majority of the members of the Board of Supervisors.

BACKGROUND

All City departments are restricted to using the Vehicle Selector List¹ issued by the City Administrator when purchasing sedans, light duty pickup trucks, and vans with a gross vehicle weight under 8,500 pounds.

On July 15, 2015, the Board of Supervisors approved an ordinance (File 14-0950) amending the City's Environment and Administrative Codes to provide for a reduction in average per-mile greenhouse gas emissions from the City's light duty trucks or passenger vehicles. These Code amendments specified a reduction in gas emissions of four percent by the end of fiscal year 2017, and 15 percent by the end of fiscal year 2021. The ordinance also included a review of the implementation of these policies after one year, which was submitted to the Board of Supervisors on November 30, 2016.

DETAILS OF PROPOSED LEGISLATION

The proposed ordinance would amend the City's Administrative and Environment Codes to require that any new passenger vehicles and light duty trucks procured for the City fleet be a Zero Emission Vehicle, such that all light duty vehicles² in the City's fleet are Zero Emission Vehicles by December 31, 2020, unless a waiver is obtained. Such waivers could be granted by the City Administrator if

- (a) There is no passenger vehicle or light duty truck approved by the Vehicle Selector List that meets all applicable safety standards and requirements,
- (b) The passenger vehicle or light duty truck will be used primarily outside the geographic boundaries of San Francisco, or
- (c) The common intended use for the vehicle is to regularly travel more than 100 miles without access to an electric charging station.

The proposed ordinance would also amend the City's Environment Code to encourage the selection of Zero Emission Vehicles in other vehicle classes, as technology improves. In accordance with the proposed ordinance, a Zero Emission Vehicle is a vehicle that produces no emissions from the on-board source of power, as determined by the California Air Resources Board.

The proposed ordinance also provides exemptions for

¹ The Vehicle Selector List is a document issued by the City Administrator, in consultation with the Department of the Environment. The Vehicle Selector List is compliant with the Healthy Air and Clean Transportation Ordinance (HACTO) and takes into account environmental considerations with the goal of reducing greenhouse gas emissions.

² Light duty vehicles are not defined in the proposed legislation but appear to include passenger vehicles, sedans and light duty trucks.

(a) Emergency vehicles if the public safety department purchasing the vehicles concludes, after consultation with the City Administrator, that the purchase of Zero Emission emergency vehicles is not feasible or would otherwise interfere with the department's public safety mission,

(b) San Francisco Municipal Transportation Authority buses,

(c) Response to emergency needs, and

(d) If exempt from the requirements, a vehicle is selected with as low emissions and high efficiency ratings as practicable.

FISCAL IMPACT

New Vehicle Purchases and Leases

As of March 2017, the City leased and owned a total of approximately 5,876 vehicles across 70 City departments. Of the total 5,876 vehicles, which include buses, tractors, and heavy duty trucks, 2,778 are light duty vehicles that would be impacted by the proposed ordinance.

The proposed ordinance specifically changes the Administration Code to require all light duty vehicles in the City fleet to be Zero Emission Vehicles in compliance with Environment Code Section 404, and does not provide an automatic exemption for light duty trucks, Sport Utility Vehicles (SUVs) or passenger vans. However, there currently is no Zero Emission Vehicle light duty truck, SUV or passenger van option for lease or purchase on the market. According to Mr. Bruce Robertson, Finance Manager at the Department of Public Works, Public Works received a quote from a vendor regarding the costs to retrofit a light duty truck or passenger van to become a plug-in hybrid for \$95,690 per vehicle. However, such an option would still not be compliant with the proposed ordinance.

If exemptions were provided for light duty trucks, SUVs and vans, the proposed ordinance would still apply to the City's 1,586 passenger vehicles, of which only 36 are currently electric. Table 1 below shows the total 1,586 passenger vehicles and their corresponding City departments.

Table 1: Passenger Vehicles by Department

Department	Compressed natural gas	Electric	Gasoline	Hybrid	Plug-in hybrid	Total
Airport	14		44	39	1	98
Building Inspection	23	10	2	69	3	107
Courts ³	7		53	38		98
Public Works	7	10	3	71	5	96
Fire			25	49		74
General Services Agency		5	3	18	2	28
Health	27		15	36		78
Human Services	3	2	6	54		65
Library		2		1	1	4
Muni	5		52	67		124
Other	1		4	10		15
Police	8		509	46		563
Port		1	4	12		17
Public Utilities Commission	7		24	99	3	133
Recreation and Park	8	6		11		25
Sheriff	7		36	13		56
Technology				5		5
Grand Total	117	36	780	638	15	1,586

Given that the City currently has 36 electric vehicles, of the total 1,586 passenger vehicles shown in Table 1 above, the City would need to replace 1,550 passenger vehicles with Zero Emission Vehicles. However, the proposed ordinance allows public safety departments with emergency vehicles to apply for exemptions on a case-by-case basis if the purchase of Zero Emission emergency vehicles is not feasible, would otherwise interfere with the department's public safety mission or to respond to emergency needs. If all potential public safety departments applied for and received such exemptions, this could include up to 791 passenger vehicles⁴, resulting in a balance of 759 passenger vehicles that at a minimum would be subject to the proposed ordinance.

Currently there are three main options for Zero Emission Vehicles, including: battery electric vehicles, long-range electric vehicles, and hydrogen fuel cell vehicles. These three types and models, including prices and fuel ranges are summarized in Table 2 below.

³ Court vehicles include District Attorney, Public Defender, Juvenile Probation and Adult Probation.

⁴ 98 passenger vehicles in the Courts, 74 passenger vehicles in the Fire Department, 56 passenger vehicles in the Sheriff's Department, and 563 passenger vehicles in the Police Department.

Table 2: Current Zero Emissions Vehicles on the Market

Car Make and Model	Price ¹	Fuel Range
Battery Electric Vehicle (BEV)		
Smart Electric Drive	\$27,500	68 miles
Ford Focus Electric	32,032	100
Nissan Leaf	33,748	107
BMWi3	46,650	114
Long Range Electric Vehicle		
Tesla Model 3	38,500	200
Chevy Bolt	40,282	238
Hydrogen Fuel Cell EV²		
Toyota Mirai	63,250	312

1. The prices come from the manufacturer’s suggested retail price of the product plus ten percent for taxes, fees, and closing costs.
2. Currently, hydrogen fuel cells can only be fueled at stations at the Airport. Due to its limited fueling capacity, high initial price and expensive fueling cost, the hydrogen fuel cell is not included in our financial analysis.

As noted above, the proposed ordinance would necessitate the replacement of between 759 and 1,550 passenger vehicles with Zero Emissions Vehicles by December 2020. Therefore, the total cost of the replacement vehicle procurement would range from \$20,872,500 (759 vehicles x \$27,500 per vehicle for the Smart Electric Drive) to \$72,307,500 (1,550 vehicles x \$46,650 for the BMWi3) over the next two and a half years.

As the City would need to replace between 759 to 1,550 passenger vehicles with such electric vehicles by December 2020, it is anticipated that the City would sell or terminate leases on its existing fleet of passenger vehicles. According to Mr. Wyatt Donnelly-Landolt, Senior Budget and Planning Analyst in the City Administrator’s Office, the City usually replaces and then sells between 75 and 100 vehicles per year. It is possible that increasing the number of vehicles sold by the City in a given year would decrease the future sales price of each vehicle as the vehicles flood the market. The revenue realized from such vehicle sales has not been calculated because of the uncertainty under these conditions to predict the sale price and the number of leases on vehicles to be terminated. However, these revenues would offset a portion of the new electric vehicle purchase cost.

Charger Purchase and Installation

In addition to replacing between 759 to 1,550 existing City vehicles with Zero Emissions Vehicles, the City will also have to install electric vehicle infrastructure for charging the entire passenger fleet. The City currently has 249 level-two chargers.⁵ However, these chargers are not evenly distributed throughout the City. According to Mr. Derrick Leung, Retail Services at the San Francisco Public Utilities Commission, 120 of the City’s 249 electric chargers are located

⁵ There are three levels of chargers available for Zero Emission Vehicles. The first is level-one, and requires 7 to 29 hours to charge a single car. A level-two charger supplies 240V and averages from 2-10 hours to charge a single vehicle. A level-three charger is a fast-charge and can charge an entire car in about 30 minutes. According to Mr. Donnelly-Landolt, a fully electric vehicle requires a level-two or level-three chargers for practical use.

at the Airport for public use, and an additional six chargers are located on Treasure Island. Therefore, the City only has 123 chargers (249 less 126) currently located within the City proper.

According to Mr. Donnelly-Landolt, the average cost of installing a level-two charger is \$16,000.⁶ As most City vehicles are used during the day, it is assumed that each vehicle would need to be fully charged overnight while the vehicle is parked. If every vehicle had access to a level-two charger, the City would need to install between 636 and 1,427 chargers at an estimated cost between \$10,176,000 and \$22,832,000 over the next two and a half years.

Total Initial Costs

The total estimated initial cost to purchase between 759 and 1,550 new electric passenger vehicles and install between 636 and 1,427 electric chargers would range from \$31,048,500 (759 Smart Electric Cars, 636 chargers) to \$95,139,500 (1,550 BMWi3 and 1,427 chargers). These costs would be incurred between the effective date of the proposed ordinance, or 30 days after approval of the subject ordinance, through December 2020, a period of approximately 2.5 years.

Ongoing Costs

Additional costs would be incurred for the operation, maintenance and replacement of the electric vehicles and charging stations, although the amount of such annual costs cannot be estimated at this time.

POLICY CONSIDERATION

There are various implementation issues to consider with the proposed ordinance.

Issues arising from the 2020 deadline

- The City currently purchases approximately 100 new passenger vehicles a year. This ordinance would require the purchase or lease of at least approximately 759 vehicles over the next 2.5 years, or at least 304 vehicles per year.
- Market availability may hinder the ability of the City to comply with the expedited 2020 deadline as market share of Zero Emission Vehicles is currently less than one percent nationally. Furthermore, recent City ordinances prohibit the City from entering into contracts with companies based in states that bar civil-rights protections for lesbian, gay, bisexual and transgender people, such as the state of Tennessee which currently produces the Nissan Leaf.
- The City would have to replace a minimum of 759 vehicles in order to meet the goals of the ordinance. Selling this many vehicles within the timeline provided would be challenging and the City may not receive the full value of these vehicles.

⁶ According to Mr. Robertson, the Department of Public Works estimates that the installation costs of a level-two charger in an area that already has power capacity, trenched lines, and appropriate conduits is \$13,000.

- The City currently has 653 hybrid or plug-in hybrid vehicles, representing over one-third of the City's existing fleet of passenger vehicles. In addition, 356 of these hybrid or plug-in hybrid vehicles have been purchased in the past five years. According to Mr. Steven Lee, Senior Manager of Finance and Information Technology at the San Francisco Municipal Transportation Agency, the average useful life of a City vehicle is approximately eight years. Therefore, the proposed ordinance would result in the early replacement of 356 hybrid or plug-in hybrid vehicles at potentially significant but unknown cost to the City.
- It is not known whether Public Works has the capacity to plan, design and implement the installation of all the required level-two electric chargers and related infrastructure.

Lease and Grant unknowns

- According to Mr. Donnelly-Landolt, the City leases parking for approximately half of the City's entire fleet of passenger vehicles. As electric vehicles will likely need to be charged daily, the City would need to install charging stations on these leased properties. This may create future unknown issues of trying to install level-two chargers and the related electrical infrastructure on leased land.
- The City owns a number of grant-funded vehicles and may not be able to replace these vehicles by the ordinance's deadline due to grant requirements.

Issues arising from operational needs

- Fully electric vehicles purchased in order to pursue the proposed Zero Emission Vehicles ordinance would limit the City's ability to respond to a disaster. Electric vehicles provide a limited travel range before needing to recharge, which can take ten hours or more. Partial Electric Vehicles and hybrid vehicles provide more flexibility for long distance travel and rapid refueling during a disaster.
- Central Shops has limited capacity to support Zero Emission Vehicles and charger maintenance and repairs and currently has few staff who can work on Zero Emission Vehicles. With fewer combustion engine sedans, the need for maintenance and repairs on these vehicles would decrease, likely leading to layoffs in Central Shops unless these employees can be retrained to maintain Zero Emission Vehicles. In place of current employees, Central Shops may need to outsource maintenance and repairs on Zero Emission Vehicles and associated infrastructure unless existing employees can be retrained to handle electric vehicles. According to Mr. Donnelly-Landolt, current outsourcing of Zero Emission Vehicles takes approximately three weeks, as there are a limited number of certified dealerships and mechanics to work on Zero Emission Vehicle.
- The City is currently relocating Central Shops to recently purchased City property in the southern part of the City, at considerable expense. The proposed Zero Emission Vehicles requirements have not been included in the planning, design and construction of this new Central Shops facility.
- Some departments use vehicles for occasional long-distance travel. These vehicles are not currently sorted or determined to be long-range vehicles. Zero Emission Vehicles

would not meet this operational requirement, and employees would have to use personal or rental vehicles at higher costs.

- Employees sometimes park vehicles on the street or away from the City's parking facilities overnight. With Zero Emission Vehicles, all vehicles would need to park at City parking facilities overnight to receive the necessary electric charging.

Issues arising from aligning City goals

- San Francisco City Charter Section 8A.100 requires that all City Departments pursue a Transit-First Policy. Transit-First states that the City should advocate travel within San Francisco by public transit, bicycle and on foot as an attractive alternative to travel by individual automobiles. According to Mr. Lee, any policy regarding the replacement of passenger vehicles should ensure consistency with the goals of Transit-First.

RECOMMENDATION

Approval of the proposed ordinance is a policy decision for the Board of Supervisors.

BOARD of SUPERVISORS



City Hall
1 Dr. Carlton B. Goodlett Place, Room 244
San Francisco 94102-4689
Tel. No. 554-5184
Fax No. 554-5163
TDD/TTY No. 554-5227

MEMORANDUM

TO: Ben Rosenfield, City Controller, Office of the Controller
Naomi Kelly, City Administrator, Office of the City Administrator
Vicki Hennessy, Sheriff, Sheriff's Department
William Scott, Police Chief, Police Department
Joanne Hayes-White, Fire Chief, Fire Department
Deborah Raphael, Director, Department of the Environment
Dr. Michael Hunter, Chief Medical Examiner, Office of the Chief Medical Examiner
Virginia Donohue, Director, Department of Animal Care and Control
Ed Reiskin, Executive Director, San Francisco Municipal Transportation Agency

FROM: Erica Major, Assistant Clerk, Government Audit and Oversight Committee,
Board of Supervisors

DATE: March 7, 2017

SUBJECT: LEGISLATION INTRODUCED

The Board of Supervisors' Government Audit and Oversight Committee has received the following proposed legislation, introduced by Supervisor Tang on February 28, 2017:

File No. 170210

Ordinance amending the Administrative and Environment Codes to require that any new passenger vehicle procured for the City fleet be a Zero Emission Vehicle, absent a waiver, and that all passenger vehicles in the City fleet be Zero Emission Vehicles by December 31, 2020; and to encourage selection of Zero Emission Vehicles in other vehicle classes as technology improves.

If you have any comments or reports to be included with the file, please forward them to me at the Board of Supervisors, City Hall, Room 244, 1 Dr. Carlton B. Goodlett Place, San Francisco, CA 94102.

- c: Todd Rydstrom, Office of the Controller
- Theodore Toet, Sheriff's Department
- Katherine Gorwood, Sheriff's Department
- Eileen Hirst, Sheriff's Department
- Rowena Carr, Police Department
- Kristine Demafeliz, Police Department
- Kelly Alves, Fire Department
- Guillermo Rodriguez, Department of the Environment
- Christopher Wirowek, Office of the Chief Medical Examiner
- Janet Martinsen, San Francisco Municipal Transportation Agency
- Kate Breen, San Francisco Municipal Transportation Agency
- Dillon Auyoung, San Francisco Municipal Transportation Agency

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BOS-11/COB
LU, BBF, Deputies,
Dep. City Atty, Mayor's
Office

London Breed

PRESIDENTIAL ACTION

Date: 3-21-2017

To: Angela Calvillo, Clerk of the Board of Supervisors

Madam Clerk,
Pursuant to Board Rules, I am hereby:

Waiving 30-Day Rule (Board Rule No. 3.23)

File No. _____
(Primary Sponsor)

Title. _____

Transferring (Board Rule No 3.3)

File No. 170210 Tang
(Primary Sponsor)

Title. Administrative, Environment Codes - Zero Emission Vehicle
Requirements for City Fleet

From: Land Use & Transportation Committee

To: Budget & Finance Committee

Assigning Temporary Committee Appointment (Board Rule No. 3.1)

Supervisor _____

Replacing Supervisor _____

For: _____ Meeting
(Date) (Committee)

London Breed, President
Board of Supervisors

BOS-11, GAO, COB
LW, LEG Dep,
Dep CAJ Mayors
G. J. Hall

President, District 5
BOARD of SUPERVISORS



City Hall
1 Dr. Carlton B. Goodlett Place, Room 244
San Francisco 94102-4689
Tel. No. 554-7630
Fax No. 554-7634
TDD/TTY No. 544-5227

London Breed

PRESIDENTIAL ACTION

Date: March 13, 2017
To: Angela Calvillo, Clerk of the Board of Supervisors

Madam Clerk,
Pursuant to Board Rules, I am hereby:

Waiving 30-Day Rule (Board Rule No. 3.23)
File No. _____ (Primary Sponsor)
Title. _____

Transferring (Board Rule No. 3.3)
File No. 170210 Tang
(Primary Sponsor)
Title. Zero Emission Vehicle Requirements for City

From: Government Audit & Oversight Committee
To: Land Use & Transportation Committee

Assigning Temporary Committee Appointment (Board Rule No. 3.1)
Supervisor _____
Replacing Supervisor _____
For: _____ Meeting
(Date) (Committee)

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London Breed, President
Board of Supervisors

Print Form

Introduction Form

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By a Member of the Board of Supervisors or the Mayor

2017 FEB 28 PM 4:52

Date stamp
or meeting date

I hereby submit the following item for introduction (select only one):

- 1. For reference to Committee.
An ordinance, resolution, motion, or charter amendment.
- 2. Request for next printed agenda without reference to Committee.
- 3. Request for hearing on a subject matter at Committee.
- 4. Request for letter beginning "Supervisor [] inquires"
- 5. City Attorney request.
- 6. Call File No. [] from Committee.
- 7. Budget Analyst request (attach written motion).
- 8. Substitute Legislation File No. []
- 9. Request for Closed Session (attach written motion).
- 10. Board to Sit as A Committee of the Whole.
- 11. Question(s) submitted for Mayoral Appearance before the BOS on []

Please check the appropriate boxes. The proposed legislation should be forwarded to the following:

- Small Business Commission
- Youth Commission
- Ethics Commission
- Planning Commission
- Building Inspection Commission

Note: For the Imperative Agenda (a resolution not on the printed agenda), use a Imperative

Sponsor(s):

Supervisor Katy Tang, Farrell

Subject:

Administrative Codes - Zero Emission Vehicle Requirements for City Fleet

The text is listed below or attached:

Please see attached.

Signature of Sponsoring Supervisor:



For Clerk's Use Only:

170210

Major, Erica (BOS)

From: Major, Erica (BOS)
Sent: Tuesday, March 07, 2017 9:54 AM
To: Rosenfield, Ben (CON); Kelly, Naomi (ADM); Hennessy, Vicki (SHF); Scott, William (POL); Hayes-White, Joanne (FIR); Raphael, Deborah (ENV); Donohue, Virginia (ADM); Reiskin, Ed (MTA)
Cc: Rydstrom, Todd (CON); Toet, Theodore (SHF); Gorwood, Kathy; Hirst, Eileen (SHF); Carr, Rowena (POL); Demafeliz, Kristine (POL); Alves, Kelly (FIR); Rodriguez, Guillermo (ENV); Wirowek, Christopher (ADM); Martinsen, Janet (MTA); Breen, Kate (MTA); 'Auyoung, Dillon'
Subject: REFERRAL FYI (170210) Administrative, Environment Codes - Zero Emission Vehicle Requirements for City Fleet
Attachments: 170210 FYI.pdf

Greetings:

This matter is being forwarded to your department for informational purposes. If you have any comments or reports to be included with the file, please forward them to me at the Board of Supervisors, City Hall, Room 244, 1 Dr. Carlton B. Goodlett Place, San Francisco, CA 94102.

Thank you for your attention.

ERICA MAJOR
Assistant Clerk
Board of Supervisors
1 Dr. Carlton B. Goodlett Place, City Hall, Room 244 San Francisco, CA 94102
Phone: (415) 554-4441 | Fax: (415) 554-5163
Erica.Major@sfgov.org | www.sfbos.org

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The [Legislative Research Center](#) provides 24-hour access to Board of Supervisors legislation, and archived matters since August 1998.

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