

THIS PRINT COVERS CALENDAR ITEM NO.: 12

**SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY**

DIVISION: Transit

BRIEF DESCRIPTION:

Approve an amendment to the San Francisco Municipal Transportation’s (SFMTA) Zero Emission Vehicle (ZEV) Policy to allow for future trolleybus acquisition and extend the timeline for achieving a 100% zero emission fleet to align with the California Air Resources Board’s (CARB) Innovative Clean Transit (ICT) regulation timeline, which is currently 2040.

SUMMARY:

- The SFMTA is a leader in low and zero-emission vehicle adoption and is committed to achieving a zero-emission fleet as part of a comprehensive climate strategy.
- The SFMTA’s highest priority for reducing transport sector vehicle emissions is to make riding Muni, walking, rolling, and biking more reliable and attractive options than driving, and believes acquiring more hybrid electric buses in the near-term is necessary to support this.
- The ZEV Policy adopted in 2018 presents several challenges, including a prohibition on acquiring zero-emission trolleybus vehicles and a timeframe for fleet electrification that is infeasible given current financial and facility conditions.
- We are proposing a revision to the policy to allow future trolleybus acquisition and to align with CARB’s ICT regulations, which are currently targeting 2040 for full fleet electrification. This approach better reflects the timeframe for facility improvements necessary to support battery electric bus (BEB) expansion and allows for near-term procurements of hybrid electric buses to support transit reliability and mode-shift.

ENCLOSURES:

1. SFMTA Board Zero Emission Vehicle Resolution (the Resolution comprises the Agency’s ZEV Policy)

APPROVALS:

DIRECTOR  _____

SECRETARY  _____

DATE

November 2, 2023

November 2, 2023

ASSIGNED SFMTAB CALENDAR DATE: November 7, 2023

PURPOSE

Approve an amendment to the San Francisco Municipal Transportation’s (SFMTA) Zero Emission Vehicle (ZEV) Policy to allow for future trolleybus acquisition and extend the timeline for achieving a 100% zero emission fleet to align with the California Air Resources Board’s (CARB) Innovative Clean Transit (ICT) regulation timeline, which is currently 2040.

STRATEGIC PLAN GOALS AND TRANSIT FIRST POLICY PRINCIPLES

The updated Zero Emission Vehicle Policy would assist in the implementation of the following goals in the SFMTA Strategic Plan:

- Goal 5: Deliver reliable and equitable transportation services.
- Goal 8: Deliver quality projects on-time and on-budget.
- Goal 9: Fix things before they break, and modernize systems and infrastructure.

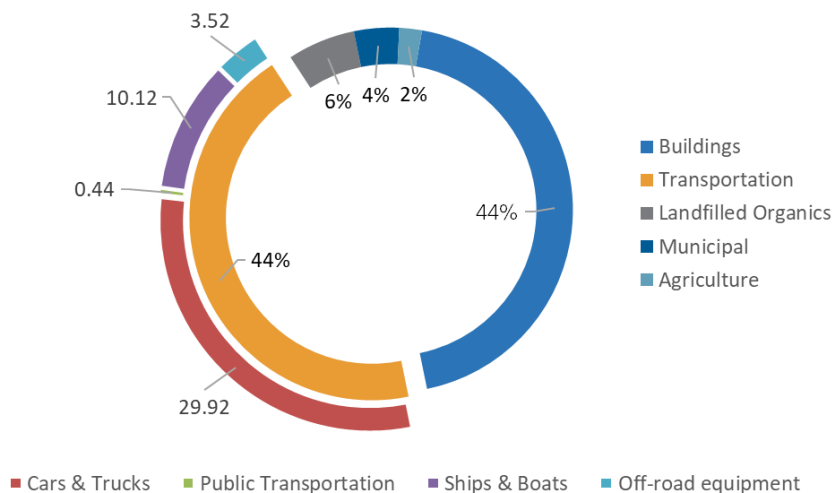
Transit First Policy:

- 1.To ensure quality of life and economic health in San Francisco, the primary objective of the transportation system must be the safe and efficient movement of people and goods.

DESCRIPTION

The transportation sector is the largest source of greenhouse gas (GHG) emissions in San Francisco, accounting for 44% citywide emissions. Of all transportation sector emissions, private cars and trucks make up the single largest source of GHG emissions citywide. Comparatively, only 1% of transportation GHG emissions are attributable to public transit as a whole and an even smaller number is attributable to the Muni fleet.

Percent of San Francisco Greenhouse Gas Emissions by Sector and Source



Data source: 2020 Greenhouse Gas Inventory, SF Environment

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In 2020, the most recent year for which data is available, the Muni fleet accounted for less than 0.001% of citywide GHG emissions from all sources, a portion so small it is not visible on the graph above. The SFMTA, along with our partners at San Francisco Environment, believes supporting mode shift by making riding transit, walking, rolling, and biking more convenient, affordable, and attractive than driving is the key strategy for reducing transportation emissions, and SFMTA's investments in enhancing Muni reliability is critical to achieving the emission reduction goals of the 2021 Climate Action Plan

Progress Toward a Zero Emission Fleet

The SFMTA has been a longtime leader for sustainable, reduced and zero emission transit vehicles:

- The Agency operates the greenest fleet of any city in North America, including the largest fleet of zero emission electric trolley vehicles in North America, running on 100% greenhouse gas-free (GHG) Hetch Hetchy hydropower, a commitment to zero-emission modes that dates back decades.
- The Muni Metro rail fleet operates on zero-emission hydropower, and Muni was an early adopter of electric hybrid buses and fossil-free renewable diesel as transitional technologies.
- In 2007, the SFMTA was one of the first agencies in North America to procure hybrid vehicles at scale, substantially reducing emissions. The SFMTA has now replaced 100% of its older buses with diesel electric hybrid vehicles, which will reduce consumption of fuel by an estimated 5.4 million gallons and CO₂ emissions by 82,000 tons over the 12-year life of the fleet.
- Starting in late 2016, the SFMTA incorporated an engine auto stop-start feature into 54 buses, reducing idling time and allowing vehicles to drive short distances entirely under electric-battery mode, further reducing hybrid vehicle emissions.
- In 2018, the SFMTA expanded on this technology with new diesel electric hybrid buses with higher capacity on-board battery systems, allowing us to operate "Green Zones" where the vehicle produces no emissions. Established Green Zones include the Tenderloin, Hunters Point, and Chinatown—neighborhoods with current and historically disproportionate emissions. The SFMTA currently has green zone capabilities on 68 vehicles and will incorporate this technology into all future hybrid procurements.
- In 2020, the SFMTA began a pilot program to evaluate battery electric bus (BEB) performance—including handling San Francisco's hills and 20+ daily service hours—and manufacturers' ability to produce buses at scale and provide aftermarket and warranty support.
- 10 battery electric buses from four bus manufacturers have been delivered and in operation since February 2022, providing the SFMTA with valuable experience operating and maintaining battery electric buses that will inform our future procurement strategy.

Zero Emission Vehicle Policy

On May 15, 2018, the SFMTA Board of Directors adopted a Zero Emission Vehicle Policy, directing the SFMTA to begin procuring exclusively battery-electric buses in 2025 to achieve a 100 percent battery electric vehicle fleet by 2035. The policy called for phasing out both our hybrid and trolley buses over a 10-year period.

CARB adopted the ICT regulation in December of 2018, and it became effective October 1, 2019. The regulation requires all public transit agencies in California to prepare a ZEB Rollout Plan (Rollout Plan) to fully transition to zero-emission buses by 2040. The ICT regulation does not require exclusive use of battery electric buses and accommodates other zero-emission vehicle types including trolleys.

The ZEB Rollout Plan was approved by the SFMTA’s Board of Directors on March 16, 2021, and revised in May 2022. We anticipate revising the ZEB Rollout Plan in early 2024 to include an updated procurement schedule, facilities schedule and Paratransit fleet electrification plan.

In the years since its adoption, it’s become clear that the SFMTA 2018 Zero Emission Vehicle Policy is infeasible, and must be updated to reflect new conditions and broader climate goals for the following reasons:

- We will not have a facility to house and charge 100+ battery electric vehicles by 2025.
- COVID-19 decimated transit ridership and revenue, delayed BEB pilot progress, and highlighted the importance of fleet resilience and flexibility.
- The 2021 Climate Action Plan puts fleet electrification in the context of broader climate action, emphasizing the importance of transit service reliability and mode shift.
- The failure of the 2022 General Obligation Bond significantly reduced our ability to fund facility improvements, and our record for obtaining federal grants is mixed.
- Electrical service and grid improvements required to accommodate BEBs are dependent on PG&E, and recent experiences suggest years-long delays are likely.

Proposed Policy Changes

Given the challenges described above, SFMTA staff propose revising the ZEV Policy to integrate the lessons learned since 2018, better integrate fleet electrification initiatives with broader climate change initiatives focused on mode-shift, and align with the CARB ICT regulation, which currently targets a 100 percent zero emission fleet by 2040 and allows for all types of zero-emissions vehicles, including trolleybuses.

This updated ZEV Policy will allow the agency to continue our path towards 100% fleet electrification without compromising transit service quality, align with the CARB ICT regulations, allow for the consideration of other zero-emission bus technologies, and give more time to evaluate the BEB pilot program and align with current facilities plans and timelines for charging infrastructure.

Fleet Procurement and Facility Development

Below is the SFMTA’s latest planned bus replacement delivery schedule through 2030:

Fiscal Year	Motor Coach Procurement				Total Procured
	40' Hybrid	60' Hybrid	40' BEB	60' BEB	
2025	47		12	3	62

2026	47			3	50
2027		48			48
2028		79	11		90
2029		5	45		50
2030		28	48		76

The SFMTA’s Zero-Emission Facility and Fleet Transition Plan, completed in February 2022, presents the framework and actions for transitioning the SFMTA’s six bus yards and fleets to support a 100% ZEV operation and help the SFMTA meet the updated ZEV policy goals. This plan will continue to be updated to reflect our best timing estimates, informed by our initial experience with battery electric buses and challenges related to PG&E coordination and funding availability. SFMTA is committed to a just transition for its workforces impacted by fleet electrification and plans no job losses outside natural attrition for either International Association of Machinists and Aerospace Workers Local 1414 or International Brotherhood of Electrical Workers Local 6 represented workforces. Per CARB requirements, the SFMTA expects to update its Rollout Plan in Q1 2024 to accommodate necessary changes to zero-emission deployment timelines. These changes will be based on the developments made to agency policy, bus procurement schedules, and facility schedules since the completion of the 2022 Rollout Plan.

ICT Rule Exemption

To ensure that transit service is not adversely impacted by the ICT rule, Section 2023.4(c)(5)(A) and (B) of the regulation provides that an agency can request an exemption from the zero-emission bus purchase requirements for a particular procurement if it can demonstrate that it cannot offset the incremental cost of purchasing zero-emission buses, including both the capital cost and associated infrastructure, as compared to a conventional bus. The request for exemption from a particular calendar year’s compliance obligation must be submitted by November 30th of that year to the Executive Officer of CARB. The request must include a letter from the SFMTA Board of Directors declaring the SFMTA has in good faith applied for all available funding and financing options that could be used to offset the higher capital costs of zero-emission buses and associated infrastructure, and that financing options are not available. If granted, the SFMTA would be exempt from the requirement to purchase zero-emission buses until the next bus purchase. For the reasons discussed in this staff report including challenges related to fiscal uncertainty, electrical service infrastructure, facility updates, and COVID-19 impacts, the SFMTA will pursue exemptions from the ICT rule as needed to prevent adverse impacts to transit service and will seek SFMTA Board approval prior to applying for any exemptions.

STAKEHOLDER ENGAGEMENT

The SFMTA developed this updated Zero Emission Vehicle Policy in collaboration with the Transit, Facilities & Real Property Management, Capital Projects and Construction, Communications, and Government Affairs divisions. In preparation for this proposed policy amendment, the Agency briefed elected officials and community stakeholders on how this policy amendment reflects our commitment to environmental stewardship and aligns with broader climate action initiatives, and outreach to environmental and community stakeholders is ongoing.

ALTERNATIVES CONSIDERED

SFMTA considered an alternative that would keep the current ZEV Policy in place. However, because the policy prohibits future hybrid vehicle procurement and we lack BEB charging facilities, adhering to the existing policy would functionally prohibit fleet replacement until at least 2028. If we do not purchase new vehicles and allow the fleet to age past its useful life, it will increase breakdowns in service, lead to the degradation of Muni service and transit mode share, and therefore a likely increase in transportation sector GHG emissions.

FUNDING IMPACT

There is no immediate funding impact associated with the amendment of the Zero Emission Policy. However, transitioning to a battery electric bus fleet will require significant capital investment in charging infrastructure and facility improvements.

ENVIRONMENTAL REVIEW

On October 19, 2023, the SFMTA, under authority delegated by the Planning Department, determined that the amendment to the Zero Emission Vehicle Resolution is not a “project” under the California Environmental Quality Act (CEQA) pursuant to Title 14 of the California Code of Regulations Sections 15060(c) and 15378(b). A copy of the CEQA determination is on file with the Secretary to the SFMTA Board of Directors and is incorporated herein by reference.

OTHER APPROVALS RECEIVED OR STILL REQUIRED

The City Attorney's Office has reviewed this calendar item.

RECOMMENDATION

Approve an amendment to the San Francisco Municipal Transportation’s (SFMTA) Zero Emission Vehicle (ZEV) Policy to allow for future trolleybus acquisition and extend the timeline for achieving a 100% zero emission fleet to align with the California Air Resources Board’s (CARB) Innovative Clean Transit (ICT) regulation timeline, which is currently 2040.

SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY
BOARD OF DIRECTORS

RESOLUTION No. _____

WHEREAS, Environmental stewardship and mitigating the effects of climate change are core San Francisco Municipal Transportation Agency (SFMTA) values; and

WHEREAS, The transportation sector is the largest source of greenhouse gas (GHG) emissions in San Francisco, accounting for 44% citywide emissions; and

WHEREAS, private vehicles (cars and trucks) are the single largest source of GHG emissions within the transport sector, while less than 0.001% of emissions from all sources are attributable to the Muni fleet; and

WHEREAS, The SFMTA's highest priority for reducing transport sector vehicle emissions is to make riding Muni, walking, rolling, and biking more reliable and attractive options than driving, and believes acquiring more hybrid electric buses in the near-term is necessary to support this; and

WHEREAS, The SFMTA is a leader in low and zero-emission vehicle adoption and operates the greenest fleet of any city in North America, and currently operates a fleet of low-emission electric hybrid vehicles which run on renewable diesel and the largest fleet of zero emissions electric trolley vehicles in North America; and

WHEREAS, In 2007, the SFMTA was one of the first agencies in North America to procure hybrid vehicles at scale, and has now replaced 100% of its older buses with diesel electric hybrid vehicles, which will reduce consumption of fuel by an estimated 5.4 million gallons and CO2 emissions by 82,000 tons over the 12-year life of the fleet; and

WHEREAS, The SFMTA has continued to innovate to reduce vehicle emissions, including by incorporating an engine auto stop-start feature to reduce idling time, procuring hybrid vehicles with increased battery capacities to operate "Green Zones" where the vehicle produces no emissions, and testing 10 electric battery buses from four manufacturers in a pilot program to evaluate their performance; and

WHEREAS, On May 15, 2018, the SFMTA Board of Directors adopted a Zero Emission Vehicle Policy, directing the SFMTA to phase out both hybrid electric and trolley buses over a 10-year period and to begin procuring exclusively battery-electric buses in 2025 to achieve a 100 percent battery electric vehicle fleet by 2035; and

WHEREAS, The California Air Resources Board's (CARB) adopted the Innovative Clean Transit (ICT) regulation in December of 2018, and it became effective October 1, 2019; and

WHEREAS, The ICT regulation requires all public transit agencies in California to prepare a Zero Emission Buses Rollout Plan and is currently requiring all agencies to fully transition to zero emission fleets by 2040; and

WHEREAS, The ICT regulation does not require fully BEB fleets and accommodates other zero-emission vehicle types including trolleys; and

WHEREAS, In the years since its adoption, it's become clear that the SFMTA 2018 Zero Emission Vehicle Policy is infeasible, and must be updated to reflect new conditions and broader climate goals; and

WHEREAS, Due to challenges including the failure of the 2022 General Obligation Bond, a mixed record on obtaining federal grants, and a reliance on PG&E for electrical service and grid improvements subject to years-long delays, the SFMTA will not have a facility to house and charge 100+ battery electric vehicles by 2025; and

WHEREAS, COVID-19 decimated transit ridership and revenue, delayed BEB pilot progress, and highlighted the importance of fleet resilience and flexibility; and

WHEREAS, The 2021 Climate Action Plan puts fleet electrification in the context of broader climate action, emphasizing the importance of transit service reliability and mode shift; and

WHEREAS, The SFMTA Board of Directors adopted the San Francisco Municipal Transportation Agency's Zero Emission Bus Rollout Plan in March 2021 as a roadmap in pursuit of a full transition to zero-emission buses and infrastructure, in accordance with the California Air Resource Board's Innovative Clean Transit regulation; and

WHEREAS, To ensure that transit service is not adversely impacted by the ICT rule, Section 2023.4(c)(5)(A) and (B) of the regulation provides that an agency can request an exemption from the zero-emission bus purchase requirements for a procurement(s) if it can demonstrate that it cannot offset the incremental cost of purchasing zero-emission buses, including both the capital cost and associated infrastructure, as compared to a conventional bus; and

WHEREAS, On October 19, 2023, the SFMTA, under authority delegated by the Planning Department, determined that the amendment to the Zero Emission Vehicle Resolution is not a "project" under the California Environmental Quality Act (CEQA) pursuant to Title 14 of the California Code of Regulations Sections 15060(c) and 15378(b); and

WHEREAS, A copy of the CEQA determination is on file with the Secretary to the SFMTA Board of Directors, and is incorporated herein by reference; now, therefore, be it

RESOLVED, That the SFMTA Board of Directors directs staff to amend SFMTA's Zero Emission Vehicle (ZEV) Policy to allow for the acquisition of zero emission vehicles including but not limited to battery electric buses and trolleybuses, and to extend the timeline for achieving

a 100% zero emission fleet to align with the California Air Resources Board's (CARB) Innovative Clean Transit (ICT) regulation timeline, which is currently 2040 and to post the updated ZEV Policy to the SFMTA website; and, be it further

RESOLVED, That zero emission fleet is one strategy among a suite of program areas to reduce effects of climate change and that providing quality and reliable service is a critical way to reduce greenhouse gas emissions.

I certify that the foregoing resolution was adopted by the San Francisco Municipal Transportation Agency Board of Directors at its meeting of November 7, 2023.

Secretary to the Board of Directors
San Francisco Municipal Transportation Agency