

THIS PRINT COVERS CALENDAR ITEM NO.: 12

**SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY**

DIVISION: Transit

BRIEF DESCRIPTION:

Adopting the San Francisco Municipal Transportation Agency's Zero Emission Bus Rollout Plan, in accordance with the California Air Resource Board's Innovative Clean Transit regulation, and authorizing Staff to submit the Rollout Plan to the California Air Resource Board by March 31, 2021.

SUMMARY:

- The San Francisco Municipal Transportation Agency (SFMTA) has been a national leader in supporting sustainable, reduced or zero emissions revenue transit vehicles.
- On May 15, 2018, the SFMTA adopted the Zero Emission Vehicle Policy to start procuring zero emission battery buses to replace their electric hybrid vehicles by 2025, with a goal of achieving a 100% electric vehicle fleet by 2035.
- On December 14, 2018, the California Air Resources Board (CARB) passed the Innovative Clean Transit (ICT) regulation, which set a goal of fully transitioning all bus fleets in the state to Zero Emission Buses (ZEBs) by 2040. This regulation requires transit agencies to submit a rollout plan detailing their plans to transition their fleets to ZEBs.
- On February 18, 2020, the SFMTA entered into a contract with WSP USA Inc. to develop an in-depth Facility and Fleet Master Plan to support the SFMTA's facility and operational transition to a zero emission battery electric bus fleet, and to assist SFMTA staff with a zero emission bus rollout plan.
- Pursuant to the ICT, the Zero Emission Bus Rollout Plan must be approved by the SFMTA's Board of Directors through the adoption of a resolution prior to submission to CARB by the March 31, 2021 deadline.

ENCLOSURES:

1. SFMTA Board Resolution
2. SFMTA Zero Emission Bus Rollout Plan

APPROVALS:

	DATE
DIRECTOR	<u>March 8, 2021</u>
SECRETARY	<u>March 8, 2021</u>

ASSIGNED SFMTAB CALENDAR DATE: March 16, 2021

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PURPOSE

Adopting the San Francisco Municipal Transportation Agency's Zero Emission Bus Rollout Plan, in accordance with the California Air Resource Board's Innovative Clean Transit regulation, and authorizing Staff to submit the Rollout Plan to the California Air Resource Board by March 31, 2021.

STRATEGIC PLAN GOALS AND TRANSIT FIRST POLICY PRINCIPLES

The Zero Emission Bus Rollout Plan would assist in the implementation of the following goals and objectives in the SFMTA Strategic Plan:

Goal 2: Make transit and other sustainable modes of transportation the most attractive and preferred means of travel.

Objective 2.1: Improve transit service

Objective 2.2: Enhance and expand use of the city's sustainable modes of transportation.

Goal 3: Improve the quality of life and environment in San Francisco and the region.

Objective 3.1: Use agency programs and policies to advance San Francisco's commitment to equity.

Objective 3.2: Advance policies and decisions in support of sustainable transportation and land use principles.

Objective 3.4: Provide environmental stewardship to improve air quality, enhance resource efficiency, and address climate change

Goal 4: Create a workplace that delivers outstanding service.

Objective 4.2: Create a collaborative and innovative work environment.

This action supports the following SFMTA Transit First Policy Principles:

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 San Francisco's largest source of greenhouse gas (GHG) emissions and criteria air pollutants. As of 2018, transportation related GHG emissions accounted for nearly half of citywide emissions, over 70% of which are attributable to private auto use. Public transportation accounts for less than 2% of citywide emissions, and less than .01% of citywide emissions are attributable to the SFMTA's transit fleet. It is clear that the SFMTA has been a leader in supporting

sustainable, reduced or zero emission revenue transit vehicles. It currently operates the largest fleet of zero emission electric trolley vehicles in North America, running on 100% greenhouse gas-free (GHG) electricity.

Environmental stewardship and mitigating the effects of climate change are core agency priorities. In fact, zero emission transit service is just one strategy among a suite of program areas the agency has identified in the Transportation Climate Action Strategy, which establishes a framework for 1) reducing GHG emissions from the San Francisco transportation sector, and 2) increasing the resilience of the San Francisco transportation system in the face of future climate impacts. In addition to making progress towards a zero-emission transit system, providing quality and reliable service will be critical for Muni to enable mode shift from private auto use.

At the SFMTA Board of Directors meeting on May 15, 2018, the SFMTA adopted a Zero Emission Vehicle Policy outlining steps the SFMTA has taken and plans to take to support sustainable, zero emission revenue transit vehicles. The adopted policy states that the SFMTA will begin procuring zero emission buses in 2025, with a goal of achieving a 100 percent battery electric vehicle fleet by 2035.

The Innovative Clean Transit (ICT) regulation was adopted by the California Air Resources Board (CARB) in December of 2018 and became effective October 1, 2019. The ICT regulation requires all public transit agencies in California to gradually transition their bus fleets to zero-emission technologies with the goal of full transition to zero-emission buses by 2040.

The ICT regulation requires that each agency prepare a ZEB Rollout Plan (“Rollout Plan”). The purpose of the Rollout Plan is to ensure each agency has a strategy to comply with the 2040 requirement of a fully zero emission fleet. The ICT regulation requires each agency to submit a Rollout Plan on an annual basis starting in 2020. Upon request, CARB granted an extension to submit the Rollout Plan to most of the large transit agencies in California due to the impacts of COVID-19. The SFMTA was granted permission by CARB to submit the Rollout Plan, along with the required annual compliance report, by March 31, 2021.

CARB plans to use the Rollout Plan as a living document to help provide targeted incentives, understand challenges to achieving the 2040 goal, inform utilities about infrastructure and electrical upgrades needs and engage the public about the environmental benefits of ZEBs. Each Rollout Plan must be approved by the transit agency’s governing body through the adoption of a resolution, prior to submission to CARB.

The ZEB Rollout Plan will contain the following elements:

- A goal of full transition to zero-emission buses by 2040.
- A schedule for construction of facilities and infrastructure modifications or upgrades, including charging, fueling, and maintenance facilities, to deploy and maintain zero-emission buses.

- A schedule for zero-emission and conventional internal combustion engine buses purchases and lease options.
- A description on how a transit agency plans to deploy zero-emission buses in disadvantaged communities as listed in the latest version of “CalEnviroScreen.”
- Identification of potential funding sources.
- Start-up and Scale-up Challenges.

On February 18, 2020, the SFMTA Board authorized the Director of Transportation to enter into a contract with WSP USA Inc. to develop an in-depth Facility and Fleet Master Plan to support the SFMTA’s facility and operational transition to a zero-emission battery electric bus (BEB) fleet and to assist SFMTA staff with drafting the Rollout Plan.

The Rollout Plan includes an approach to facility and infrastructure conversion that would enable a full transition by 2040, subject to a broad list of start-up and scale-up challenges and caveats. Facilities upgrades for charging infrastructure are needed at all six SFMTA bus facilities and these upgrades need to roll out in advance of the bus procurements they are intended to support. The achievement of the schedule is entirely dependent on an organized and phased approach to infrastructure and facility upgrades and on-time delivery of additional electrical supply by our utility partners. The Rollout Plan merges the functional obsolescence and life safety concerns of the facilities identified for rebuild in the Building Progress Program (e.g., Potrero Yard in 2027 and Presidio Yard in 2029) with the legislative mandate for the BEB fleet. As a result, the facility priorities in the Building Progress Program are being updated for the SFMTA Board’s consideration. For example, Kirkland Yard, originally planned as the third Building Progress rebuild for 2032, presents an early opportunity to jump start 40’ BEB facility capacity through a near-term electrical upgrade and site improvement, and the SFMTA is starting a process to evaluate this project to better understand how much a retrofit would cost, how efficiently it can be delivered and what is a reasonable timeline to deliver this project. The near-term Kirkland improvement does not resolve all of the facility issues at this site, but it may be a reasonable strategy to accommodate the BEB fleet mandate. The SFMTA plans to improve the two facilities that require minimal additional capital investment (Islais Creek and Flynn) with BEB improvements in a phased approach between 2026 and 2040. Woods Yard would be fully rebuilt and expanded in approximately 2034 following the Presidio Yard rebuild. At the tail end of the program, Kirkland Yard would be rebuilt with modern maintenance function in approximately 2040. The interrelationships and contingencies of the facility projects are complex and include tradeoffs in all scenarios. The SFMTA will continue to analyze the facility program and will engage the SFMTA Board for advice and policy guidance on the various potential approaches. These will also be further evaluated in the SFMTA’s Zero-Emission Facilities and Fleet Plan, which is a more comprehensive plan and is still in the development stage.

Rollout Plan Fleet Procurement Approach

The California Air Resource Board’s (CARB) Innovative Clean Transit (ICT) regulation requires all public transit agencies in the state to transition from internal combustion engine buses to zero-emission buses (ZEBs), such as battery-electric (BEB) or fuel cell electric (FCEB) by 2040. The

regulation requires a progressive increase of an agency's new bus purchases to be ZEBs based on fleet size. For the SFMTA, 25% of all new purchases need to be ZEBs by 2023 and 50% by 2026. Starting in 2029, 100 percent of all transit agencies' new bus purchases must be ZEBs. At this time, staff sees a challenging, but feasible pathway to meet CARB's ICT regulation, which requires 100% zero emission bus purchases starting in 2029 with the goal of full transition to zero-emission buses by 2040. Meeting the more ambitious SFMTA Zero Emission Vehicle Policy will be more challenging as we do not currently have a viable facility upgrade that will be completed by 2025.

To incentivize early adopters of ZEBs, the ICT regulation allows the use of "bonus credits" to be applied to offset an agency's required ZEB purchases (at a 1:1 ratio). Based on the ICT regulation's parameters, the SFMTA is entitled to 30 bonus credits (18 bonus credits for trolley buses and 12 bonus credits for the 12 planned battery electric pilot buses. The SFMTA board has approved the nine pilot buses. Staff will bring three additional pilot buses for Board approval. The SFMTA intends to apply its bonus credits for the procurement and delivery of 112 hybrid electric buses in 2025. In lieu of satisfying the 25% ICT ZEB purchase requirement, the SFMTA will use 28 of its credits (25% of 112 buses). The SFMTA's next scheduled procurement (2027) and all future procurements will be 100% ZEBs, with the goal of converting the entire bus fleet to ZEBs by 2040.

Staff acknowledges that the proposed Rollout Plan is inconsistent with the procurement goals established in the SFMTA's Zero Emission Vehicle Policy, due to the proposed procurement of the 112 hybrid-electric vehicles in 2025. This is a result of technology and market analysis that have adjusted our outlook, both concerning fleet performance and the projection that the SFMTA will not have a BEB facility to house 112 vehicles in 2025. The SFMTA proposes this procurement approach for the following reasons:

Ongoing Fiscal Uncertainty. In an increasingly constrained funding environment, the SFMTA does not have a sustainable funding strategy to support a ZEB transition starting in 2025. SFMTA faces a structural deficit with little to no operating reserves due to the recession induced by COVID-19 and shrinking capital revenues. The SFMTA must prioritize projects that support core service reliability and maintain a state of repair in the system. Under existing conditions, the SFMTA has funding gaps to construct the infrastructure at any of our six bus facilities in time to accept buses by 2025 (unless specific funding streams are identified through other resources). Potrero Yard, the SFMTA's first planned purpose-built BEB facility, is expected to be operational in 2027, with the ability to support 85 40' BEBs. Ultimately, Potrero Yard will be able to support 213 BEBs (2034) as the existing trolley bus fleet is retired and replaced.

Dependence on SFPUC and PG&E Enhancements. The SFMTA's bus yards will require additional electrical service and infrastructure to accommodate BEBs. Provision of new electrical service and any associated grid improvements are beyond the SFMTA's control. As previously mentioned, the SFMTA cannot operate BEBs unless there is infrastructure and a sufficient amount of power to support them - well in advance of the bus delivery. The SFMTA needs a strong partnership with SFPUC and PG&E as significant coordination and collaboration is required in order to adhere to the City's capital project schedule.

Facility Condition Challenges. The SFMTA's six bus facilities are all at or above their existing vehicle design capacity and several of the facilities are in poor condition. In addition, the SFMTA is in the early implementation phase of the Building Progress Program, a facility capital program to rebuild and expand the SFMTA's most obsolete facilities. Weaving together state of repair investments with BEB readiness is logistically very complex. Based on preliminary estimates of the master planning efforts, the initial cost to procure a BEB fleet is estimated at \$1.4B and the cost of facilities upgrades/rebuild is estimated at \$2-3B considering both the cost of full reconstruction of some sites and conversion of others. The Facilities and Fleet Plan will include high level cost estimates. While the Rollout Plan presents a strategy for conversion of all facilities by 2040, transitioning of all facilities is a complex process that relies on delivery efficiency and project phasing relating to infrastructure upgrades.

COVID-19 Impact and Future Resiliency. COVID-19 has impacted all facets of our global economy, and transit is not excluded. As we are still experiencing the deepening impacts of the pandemic, it is unclear what the long-term impacts will be on service. The battery electric bus pilot program has been delayed due to COVID-19, further minimizing our experience to date with the new technology. COVID-19 has highlighted the importance of fleet and facility resiliency and has emphasized the need to be prepared for uncertainty. The SFMTA's Zero Emission Vehicle Policy and the CARB's ICT regulation does not address the SFMTA's role in City and regional emergency response or the SFMTA's need for a long-range fleet that is not reliant on the electrical grid. The SFMTA recommends that a contingency fleet not reliant on the electrical grid be maintained for use in emergencies, special events, and redundant operations in the event of prolonged electrical service interruption. The SFMTA has a response role for local and regional assistance for mass evacuation for wildfire, earthquake, tsunami, and other emergency situations that cannot be met by a BEB fleet. By procuring a fleet of 112 hybrid-electric buses in 2025, the SFMTA ensures fleet adaptability and emergency response capabilities for an additional 12 years. This will also give the industry and the region time to evaluate the performance of BEBs in emergency response roles.

The SFMTA plans to spend the next six to nine months evaluating the feasibility of meeting the Zero Emission Vehicle Policy. Staff would focus on the following actions:

- Continue to implement and learn from the BEB pilot program, including bringing the expansion of the pilot program for SFMTA board's approval to include a fourth manufacturer to procure three additional BEBs.
- Explore the possibility of increasing the e-bus capacity at Woods to accommodate 15 additional BEBs. This option would allow us to take advantage of the scalability of the pilot program infrastructure without significant capital costs.
- Finalize the Zero Emission Facility and Fleet Master Plan to understand implementation priorities.
- Continue stakeholder engagement on the best approaches to meet the ZEV Policy.
- Engage staff and labor unions regarding operational logistics.

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- Explore alternative funding strategies, including but not limited to assessing reallocation tradeoffs and pursuing competitive funding opportunities.
- Identify methods to accelerate BEB charging infrastructure capital improvements or perform partial BEB facility conversions.
- Develop detailed scope for the first BEB transition facility, which will allow us to apply for all suitable funding opportunities, including “shovel ready” projects.

Upon approval of the Resolution, staff will submit the Zero Emission Bus Rollout Plan to CARB by March 31, 2021.

STAKEHOLDER ENGAGEMENT

The SFMTA developed this Rollout Plan in collaboration with the Transit, Facilities & Real Property Management, Capital Projects and Construction, Communications, and Government Affairs divisions. The community engagement strategy consists of stakeholder briefings and emails to inform policy makers, advocates and environmental organizations of the SFMTA’s ICT Bus Rollout Plan and the updates on the progress made towards zero emission fleet. Stakeholder briefings are ongoing and to date have included:

- San Francisco Transit Riders
- Livable Cities
- Brightline Defense
- Union of Concerned Scientists
- San Francisco County Transportation Authority
- District 3 Supervisor’s Office
- District 4 Supervisor’s Office
- District 7 Supervisor’s Office
- District 8 Supervisor’s Office
- Mayor’s Office

Over the next six to nine months, the SFMTA will continue to engage with stakeholders regarding the agency’s efforts to meet its Zero Emission Vehicle Policy and solicit their feedback.

ALTERNATIVES CONSIDERED

No alternatives were considered. The development of the SFMTA’s Zero-Emission Bus Rollout Plan is a requirement by CARB and the ICT regulation.

FUNDING IMPACT

Since the Zero Emission Bus Rollout Plan is a document intended to communicate all required planning before the purchase requirements of the ICT commence, the Rollout Plan has no immediate funding impact. However, transitioning to a battery electric bus fleet will require

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significant capital investment in charging infrastructure and will require modification of existing SFMTA facilities to accommodate battery electric buses in the future.

ENVIRONMENTAL REVIEW

On February 5, 2021, the SFMTA, under authority delegated by the Planning Department, determined that the Zero Emission Bus Rollout Plan 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

Staff recommends that the SFMTA Board adopt the San Francisco Municipal Transportation Agency’s Zero Emission Bus Rollout Plan, in accordance with the California Air Resource Board’s Innovative Clean Transit regulation, and authorize staff to submit the Rollout Plan to the California Air Resource Board.

SAN FRANCISCO
MUNICIPAL TRANSPORTATION AGENCY
BOARD OF DIRECTORS

RESOLUTION No. _____

WHEREAS, The San Francisco Municipal Transportation Agency (SFMTA) has been a national leader in supporting sustainable, reduced or zero emissions revenue transit vehicles; and

WHEREAS, On May 15, 2018, the SFMTA adopted a zero emission policy to start procuring zero emission battery buses to replace their electric hybrid vehicles by 2025, with a goal of achieving a 100% electric vehicle fleet by 2035; and

WHEREAS, On December 14, 2018, the California Air Resources Board (CARB) passed the Innovative Clean Transit (ICT) regulation which set a goal of fully transitioning all bus fleets in the state to Zero Emission Buses (ZEBs) by 2040; and

WHEREAS, The ICT regulation requires transit agencies to submit a rollout plan detailing their plans to transition their fleets to ZEBs; and

WHEREAS, On February 18, 2020, the SFMTA entered into a contract with WSP USA Inc. to develop an in-depth Facility and Fleet Master Plan to support the SFMTA's facility and operational transition to a zero emission battery electric bus fleet, and to assist SFMTA staff with a zero emission bus rollout plan; and

WHEREAS, The SFMTA has worked jointly with WSP over the last year to produce a Rollout Plan that presents an adequate approach to the zero emission bus conversion within the timeline required by CARB, with several start-up challenges and caveats included; and

WHEREAS, The Rollout Plan is intended as a living document and a snapshot in time, and will be updated annually by the SFMTA and those updates submitted to CARB; and

WHEREAS, On February 5, 2021, the SFMTA, under authority delegated by the Planning Department, determined that the Zero Emission Bus Rollout Plan 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 adopt the San Francisco Municipal Transportation Agency's Zero Emission Bus Rollout Plan as a roadmap and living document 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 authorize staff to submit the Rollout Plan to the California Air Resource Board.

I certify that the foregoing resolution was adopted by the San Francisco Municipal Transportation Agency Board of Directors at its meeting of March 16, 2021.

Secretary to the Board of Directors
San Francisco Municipal Transportation Agency