

Washington Metropolitan Area Transit Authority
Board Action/Information Summary

☒ Action ☐ Information

MEAD Number:
202278

Resolution:
☒ Yes ☐ No

TITLE:

Sustainability and Metrobus Fleet Strategy

PRESENTATION SUMMARY:

Staff will present jurisdictional feedback on a sustainability vision and principles, proposed in November 2020, and request Board adoption. Staff will also provide information on the proposed Metrobus fleet strategy, discuss the proposed move to zero-emission vehicles, and request Board adoption of zero-emission vehicle goals.

PURPOSE:

To receive Board approval of a sustainability vision and principles; to provide information to the Board regarding the development of the sustainability vision and principles, the Metrobus Fleet Plan strategy; and to receive Board approval of zero emission vehicle goals.

DESCRIPTION:

The establishment of a sustainability vision and principles and zero-emission vehicle goals will provide a framework for policy and investment decision-making.

For purposes of the Board consideration of the Metrobus Fleet Strategy and establishing zero emission vehicle goals, please see the attached list of potentially interested parties.

Key Highlights:

- Metro has made progress on its sustainability goals by identifying and implementing initiatives that enhance sustainable investment, including but not limited to lighting improvements, the solar lease program, the Energy Action Plan, and the zero-emission bus program.
- A Board-adopted sustainability vision and principles will support a systematic approach to sustainability, including engaging stakeholders in strategic conversations regarding sustainability and supporting partnerships across the region.
- Adoption of a sustainability vision and principles aligns Metro with jurisdictional partners who are implementing sustainability and resilience policies to guide their operations, planning, and decision making.

- The Metrobus fleet strategy has the potential to reduce regional greenhouse gas emissions and improve local air quality.
- Metro is recommending three goals be established which will inform the development of the next Metrobus Fleet Plan:
 - o Purchase only lower-emission and electric buses in next bus vehicle procurement
 - o Transition to 100% zero-emission bus purchases by 2030
 - o 100% zero-emission bus fleet by 2045
- Transition to zero-emission bus technologies will have impacts on fleet operations, capital costs, operating costs, maintenance, facilities and required facility and charging infrastructure investments.
- Electric bus technologies are expected to continue to mature; Metro will monitor and study this technology, including through the Electric Bus Test and Evaluation and other methods.

Background and History:

Sustainability Vision and Principles

Sustainability is a fundamental business approach at Metro that advances regional goals and provides social equity, economic and environmental benefits to the communities served. As a vital transportation link that occupies and connects communities, a major employer and purchaser of goods and services, and one of the region's largest energy consumers, Metro's investments and operational decisions have immediate and significant impacts on health, equity, economic prosperity, and the overall social and economic wellbeing of the region.

Cost-effective and data-driven sustainable business decisions provide Metro's funding partners with a strong return on investment, while also achieving mutually beneficial goals. By building, operating, and maintaining a safe, reliable, resilient and sustainable transit system, Metro enhances environmental stewardship, contains operating costs, and reduces energy use and regional emissions, all while improving the lives of residents and visitors.

Metrobus Fleet Strategy and Zero-Emission Goals

Metro maintains a fleet of over 1,500 buses at ten operating divisions located throughout the region. This fleet consists of a mix of diesel, compressed natural gas, and diesel-electric hybrid buses, as well as one electric bus. Bus technologies continue to develop and mature, especially electric buses in recent years.

Metro regularly updates its Metrobus Fleet Management Plan to reflect current and future fleet operations, forecast anticipated ridership and network demand, detail upcoming bus procurement and retirement plans, and discuss systemwide maintenance and facility needs.

In 2019 alone, passengers took over 300 million trips on Metrorail and Metrobus. Every trip taken with Metro instead of a car reduces the region's greenhouse gas emissions and improves local air quality. The use of lower-emission and zero-emission vehicles would further reduce greenhouse gas emissions and benefit public health.

Metro's current bus procurement contract will end in FY2023. The next five-year procurement will be initiated in FY2022, with deliveries anticipated to begin in FY2024. The Board adopted 2017 Metrobus Fleet Plan calls for procurement of equal numbers of diesel and compressed natural gas buses. As electric bus technologies continue to mature, Metro can revise its long-term fleet strategy to include an expanded zero-emission fleet. Transition to zero-emission buses in Metro service will have impacts on Metro's capital costs, facilities, operations, and benefits to regional air quality and greenhouse gas emissions.

Discussion:

Sustainability Vision and Principles

Metro is committed to providing a sustainable transportation system – a system that meets the needs of people, communities, and businesses in the region, and fosters social wellbeing, equity, economic prosperity, and environmental stewardship.

Resilience and sustainability are at the forefront of transportation planning throughout the region. This planning requires an interconnected effort with regional partners and jurisdictions. Metro intends to advance this dialogue further by setting a sustainability vision and principles to help guide long range planning and investment decisions.

In November 2020, Metro presented draft sustainability principles to the Board. The draft principles recognize sustainability as a core value within Metro and drive decision-making to improve efficiency, reflect customer needs, further support regional sustainability, and align with industry best practice.

During the winter of 2020 and spring of 2021, staff gathered feedback on the proposed principles from the jurisdictions, which confirmed that the proposed principles are in alignment with regional goals.

Metro is focused on advancing transit and social equity across its operations and business through a Framework for Transit Equity with focus areas including: the Bus Transformation Project, DBE/MBE programs, public participation, and sustainability.

Metro is updating its sustainability targets to expand beyond traditional environmental targets to include targets related to equity, prosperity, livability,

and accessibility.

Metrobus Fleet Strategy and Zero-Emission Goals

Of the approximately 55,000 public transit buses in operation in the United States, approximately 29,000 are diesel buses, 12,500 are compressed natural gas buses, 9,000 diesel-electric hybrid buses, 3,600 biodiesel buses, 600 electric trolleybuses, and 500 battery-electric buses in operation. An additional 500 battery-electric bus orders are pending.

Peer transit agency approaches to electric buses have included target year fleet commitments, test deployments and the monitoring of the development of the technology. In a survey of available electric bus pilot programs, electric buses have not yet demonstrated consistent reliability on par with conventional vehicles. Improvements in this area are expected as technologies scale and manufacturers respond to a shift in market commitments to electric buses.

Metro will continue to monitor electric bus range, availability, reliability and other performance factors with the expectation that electric buses will eventually be capable of replacing conventional buses on a one-for-one basis. Metro's upcoming Electric Bus Test and Evaluation, which will involve the procurement of approximately 12 electric buses in FY2023, will provide data and experience with electric bus performance in Metro operating conditions.

In considering the future of the Metrobus fleet, Metro projects its anticipated future service levels, fleet size, fleet composition and maintenance facility and operational needs. Metro typically procures 100 new buses per fiscal year while overhauling another 100 buses at their midlife. The proposed draft fleet strategy would maintain this approach while increasing the number of articulated buses in the fleet.

Metro's draft fleet strategy also proposes a phased conversion of the Metrobus fleet, investing in electric bus technology, facilities, and infrastructure in the coming years. Beginning in FY2024, Metro would purchase only lower-emission and electric buses. By FY2030, Metro would procure only electric or other zero-emission buses. Under this proposed strategy, the entire Metrobus fleet would be made up of zero-emission vehicles by FY2045.

The Metropolitan Washington Council of Governments (MWCOC) has identified ground-level ozone and particulate matter as the two most important pollutants harmful to health in the region. Ozone is formed by the interaction of nitrogen oxides (NO_x) and volatile organic compounds (VOCs). The Washington region is not currently meeting standards for ozone, while it is meeting standards for particulate matter with occasional exceedance days.

By procuring vehicles which emit fewer harmful pollutants such as NO_x and VOCs, the Metrobus fleet can contribute to regional air quality improvements.

The draft strategy would also reduce Metrobus fleet greenhouse gas emissions by an estimated ~56% by 2030 and an estimated ~78% by 2038. Electric buses are also quieter and vibrate less, offering increased passenger comfort and an improved riding experience.

Metrobus facilities are not currently configured to support an electric bus fleet. Capital investment in facility conversion and other electric bus support infrastructure will be required to begin the transition of the fleet. Facility requirements include charging equipment, garage configuration changes, support and coordination with electric utilities, parts and material storage and other operational and safety considerations. Metro will continue to coordinate with regional electric utilities, jurisdiction and transit providers as it advances future fleet and facility plans.

FUNDING IMPACT:

Adopting these sustainability vision and principles and the zero-emission fleet goals does not have a direct financial impact on the FY2022 Budget. A transition to a 100% zero-emission fleet and other sustainability projects and initiatives offer a transformational investment opportunity for Metro and the Region.

TIMELINE:

Previous Actions	September 2017 - Adoption of 2017 Metrobus Fleet Management Plan July 2020 – Sustainability Initiative Update July 2020 – Transit Equity Framework November 2020 – Transit Equity Framework: Sustainability
Anticipated actions after presentation	Return to the Board with a Metrobus Fleet Plan that aligns with Metro’s sustainability vision and principles and zero emission vehicle goals.

RECOMMENDATION:

Staff recommends approval of the sustainability vision and principles and the zero emission vehicle goals.

Potentially Interested Parties List

Metrobus Fleet Plan strategy and zero emission vehicle goals

Currently under contract:

- AECOM
- BAE Systems Controls, Inc.
- Center for Transportation and the Environment
- CH2M HILL, Inc.
- Clark Construction Group, LLC
- CRW Parts, Inc.
- Cummins, Inc.
- Dartco Transmission Sales & Service, Inc.
- Direct Machinery Outlet, Inc.
- Genfare
- Gillig Corporation
- Hensel Phelps Construction Co.
- James River Petroleum (JRP)
- Johnson & Towers Baltimore, Inc.
- Laird Plastics, Inc.
- Lytx, Inc.
- Modine Manufacturing Company
- Needles Eye
- Neopart Transit, LLC
- New Flyer of America, Inc.
- Northeastern Bus Rebuilders, Inc.
- P & H Auto-Electric, Inc.
- RAM Industrial Services, Inc.
- The Aftermarket Parts Company, LLC
- Tri-state Battery & Auto Elec., Inc.
- WSP

Other potentially interested parties:

- A123 Systems
- Baltimore Gas & Electric Company – an Exelon Company
- BYD Motors, Inc.
- Daimler
- Dominion Energy, Inc.
- ElDorado National
- Leclanché
- Microvast Power Solutions, Inc.
- Novabus
- Pepco – an Exelon Company
- Proterra
- Van Hool
- Washington Gas – a WGL Company
- XALT Energy

PRESENTED AND APPROVED: June 24, 2021

SUBJECT: ADOPTION OF A SUSTAINABILITY VISION AND PRINCIPLES AND ZERO EMISSION VEHICLE GOALS

2021-23

**RESOLUTION
OF THE
BOARD OF DIRECTORS
OF THE
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY**

WHEREAS, Pursuant to Compact § 9(b), and Bylaws, Article II.1, the Board of Directors is primarily responsible for policy, financial direction, oversight, and WMATA's relationships with its customers, jurisdictional partners, and signatories; and

WHEREAS, WMATA has a long-standing commitment to enhancing the sustainability of the Washington Metropolitan Area; and

WHEREAS, Adopting a sustainability vision and principles will set direction and pillars for sustainability, which WMATA will implement through capital investments, operational planning, and strategic engagement throughout the region; and

WHEREAS, Adopting zero emission vehicle goals will enable WMATA to advance an updated Metrobus Fleet Plan and make purchasing decisions to transition to a zero emissions bus fleet;

NOW, THEREFORE, be it

RESOLVED, That the Board of Directors adopts the Sustainability Vision and Principles included as Attachment A to this resolution; and be it further

RESOLVED, That the Board of Directors establishes the following goals: (1) purchase only lower-emission and electric buses in the next bus procurement; (2) transition to 100% zero emission bus purchases by 2030; and (3) transition to 100% zero emission bus fleet by 2045; and be it further

Motioned by Mr. Smedberg, seconded by Ms. Gidigbi-Jenkins

Ayes: 6- Mr. Smedberg, Ms. Gidigbi-Jenkins, Mr. McMillin, Mr. Letourneau, Ms. Babers, and Mr. Slater

Abstain: 1- Mr. Goldman

RESOLVED, That this Resolution shall be effective 30 days after its adoption in accordance with Compact § 8(b).

Reviewed as to form and legal sufficiency,

A handwritten signature in black ink, appearing to read 'Patricia Y. Lee', is written over a horizontal line.

Patricia Y. Lee
Executive Vice-President and General Counsel

WMATA File Structure No.:
6.6.7. Bus Fleet Planning & Acquisition

ATTACHMENT A

Sustainability Vision and Guiding Principles

Vision

WMATA provides a sustainable transportation system that meets the needs of people, communities, and businesses in the region, and fosters social wellbeing, equity, economic prosperity, and environmental stewardship.

Guiding Principles

1. Develop and implement an action plan with specific priorities, strategies, and targets to advance sustainability at WMATA and in the region
2. Recognize that our investments and operational decisions change lives. Make those decisions intentionally to address historical, social, environmental, and economic disparities and racial and social injustice
3. Build, operate, and maintain a resilient transportation system to improve livability, the environment, public health, equity, and access to opportunity
4. Leverage the special nature of WMATA's service and our unique market position to advance regional goals
5. Make cost-effective and data-driven business decisions that provide WMATA and its partners with the best return on their investment
6. Advance the region's efforts by leading transparent and authentic collaboration with stakeholders and community partners
7. Foster a culture of continuous improvement by growing staff capacity and leveraging regional expertise and innovation
8. Establish measurable performance indicators to track implementation and successes of WMATA's strategies and actions