Alexandria Transit

# September 2025 ATC Board of Directors / City Council Joint Work Session: Summary & Responses

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# Contents

# Introduction

In September 2025, the Alexandria City Council and the Alexandria Transit Company (DASH) Board of Directors convened a joint work session to engage in a detailed discussion of DASH's service delivery, fleet transition strategy, and long-term funding considerations - particularly as they relate to zero-emission bus (ZEB) deployment and system growth. The work session provided an opportunity for elected officials and board members to ask in-depth questions, explore trade-offs, and better understand the fiscal, operational, and policy constraints shaping DASH's decisions.

This summary documents the questions raised during that joint session and the corresponding responses provided by DASH staff. It is intended to serve as a shared reference for City Council, the DASH Board, City staff, and the public, capturing the factual basis, assumptions, and policy context that informed the discussion. The document does not establish new policy direction; rather, it reflects the current state of analysis, funding realities, and industry conditions facing DASH as it balances service expansion, fiscal stewardship, and climate goals.

# How to Use This Document

This document is intended to serve as a reference and decision-support tool for City Council, the DASH Board of Directors, and City staff. Each section is organized around specific questions raised during the September 2025 joint work session and presents the corresponding responses, data, and contextual information available at the time.

Readers may review the document sequentially or consult individual sections as needed to inform policy discussions, budget deliberations, and future work sessions. The content reflects current conditions, assumptions, and funding environments and should be used to support informed dialogue rather than as a statement of adopted policy or final determinations.

# Executive Summary

The joint work session focused on three interrelated themes: (1) the economic and community value of public transit in Alexandria, (2) the pace, cost, and feasibility of fleet electrification, and (3) the trade-offs between investing in zero-emission technology and expanding transit service.

## KEY TAKEAWAYS FROM THE DISCUSSION INCLUDE:

- **Transit's economic and mobility value.** Public transit is a critical economic driver for Alexandria. National and regional analyses consistently show that investment in transit yields strong economic returns, supports tens of thousands of local jobs, reduces congestion, and limits growth in traffic delay. Increased service frequency and reliability not only improve rider experience but also advance equity and access goals.

- **Electrification progress and constraints.** DASH has made measurable progress toward fleet electrification, with electric buses already in service and additional vehicles funded through competitive federal, state, and regional grants. However, electrification remains significantly more expensive than diesel replacement, driven by higher vehicle costs, charging infrastructure needs, limited manufacturing capacity, and Buy America requirements. Full fleet electrification would require substantially more capital investment than maintaining a diesel fleet and would depend heavily on continued success in highly competitive discretionary grant programs.

- **Service growth versus emissions reduction.** Analysis presented during the session demonstrated that increasing transit service yields greater near-term greenhouse-gas reductions per dollar spent than fleet electrification alone, by shifting trips from single-occupancy vehicles to transit. While electrification reduces tailpipe emissions over time, service expansion provides immediate climate, congestion, and equity benefits—but at a much higher annual operating cost. Importantly, operating and capital funding sources are largely distinct, limiting flexibility in how savings or investments can be reallocated.

- **Peer agency comparisons.** Comparisons to other transit systems—both within Virginia and nationally—highlight that agencies electrifying more rapidly typically benefit from direct federal formula funding, dedicated local revenue sources, or voter-approved taxes. DASH's funding structure differs materially, constraining the pace at which electrification can occur without compromising service.

- **Strategic balance.** The consensus framework emerging from the discussion supports continued electrification aligned with normal fleet replacement cycles and available capital funding, while prioritizing service investments where ridership demand and community benefit are strongest. This balanced approach allows DASH to advance climate goals without undermining near-term mobility outcomes.

# Question Summary

| Topic | # | Question |
|---|---|---|
| **General** | 1 | How does transit boost the City of Alexandria economy? |
| **Zero Emissions (DASH's Program and Funding)** | 2 | What funding opportunities exist at the State level? How can we push the State to increase financial resources towards zero emissions? |
| | 3 | What is the right balance between continuing the pursuit of electrification and increasing service? |
| | 4 | How are we working with and learning from other transit systems that are electrifying their fleet? |
| | 5 | Is Dominion prepared to support an all battery electric fleet and how do their costs compare to the cost of diesel fuel? |
| | 6 | Are there opportunities with regional partners to procure equipment together to lower costs? |
| | 7 | Can we rent/lease zero emission buses, batteries, chargers etc.? |
| **Zero Emissions (Industry)** | 8 | How much does a charger, battery electric bus, etc. cost per unit? |
| | 9 | What is driving up the cost of a BEB and can we expect the cost to continue to increase? |
| | 10 | Provide an overview of the state of the bus manufacturing industry and the challenges of Buy America. |
| | 11 | Why aren't we buying buses from the manufacturer used by Link Transit in Wenatchee, WA? |
| | 12 | Why have we not pursued similar financing deals like Montgomery Count to get zero up-front costs on charging infrastructure? |
| | 13 | Santiago and Bogota have 5,000-7,000 buses, but they are electrifying their fleet rapidly. Why aren't we electrifying at the same rate as them? |
| | 14 | Why aren't we buying buses from the same sources as Santiago and Bogota? |
| | 15 | Why is DASH unwilling to pursue other sources of funding and financing to pursue the increased cost of electric buses? |
| | 16 | What are the differences in technology between older hybrid buses (2010s) and modern hybrid buses (2026)? |
| **DASH Service** | 17 | What routes would you propose to cut in 2027 so that we would not need to purchase diesel buses but could instead purchase only electric buses? |

# General

## QUESTION #1

How does transit boost the City of Alexandria's economy? *(Council Member Elnoubi)*

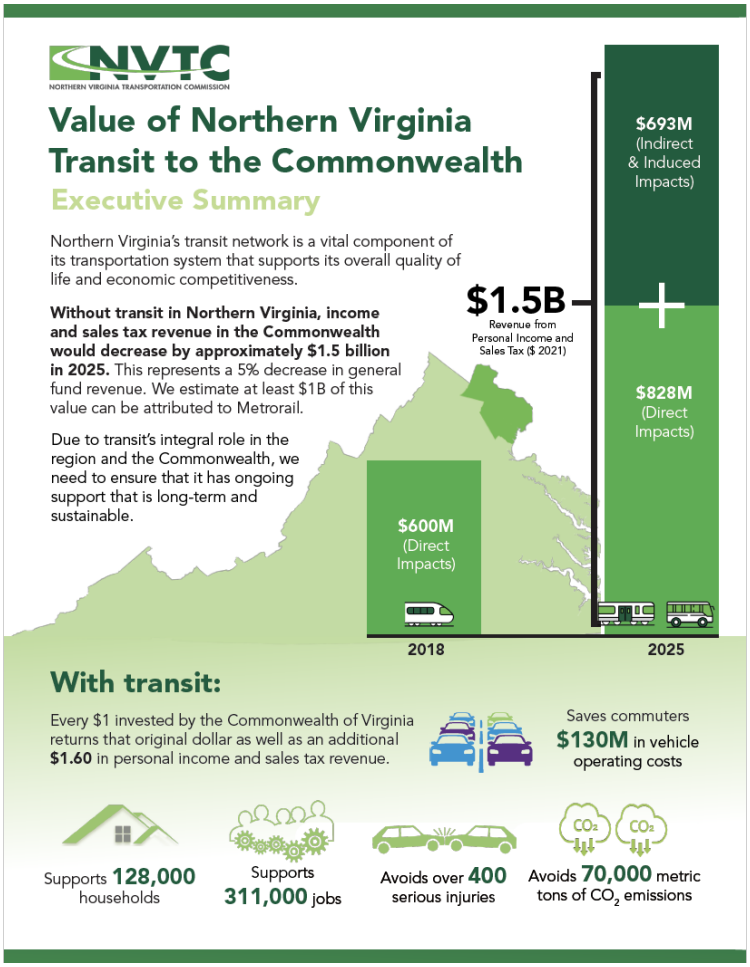
## RESPONSE

APTA estimates that every **$1 invested in public transportation generates about $5 in economic returns**.

Source: https://www.apta.com/wp-content/uploads/APTA-2025-Public-Transportation-Fact-Book.pdf

NVTC's *Value of Northern Virginia Transit to the Commonwealth* finds that every $1 invested in transit returns that original dollar, plus an additional $1.60 in statewide tax revenue. In Alexandria, transit supports 37,000 jobs and 20,000 households, keeping 36,000 daily vehicle trips off the road and preventing a 220% increase in traffic delays.

Source: https://novatransit.org/transit-dashboard/




# Zero Emissions (DASH's Program and Funding)

## QUESTION #2

What funding opportunities exist at the State level? How can we push the State to increase financial resources towards zero emissions? *(Council Member Chapman)*

## RESPONSE

Within Virginia, there is **State-level funding available to reimburse for the cost of replacement transit buses**. The State reimbursement share is 68% and applies to the cost of the baseline replacement bus, which could be clean diesel or battery electric. It is

important to note that **these programs are discretionary and competitive**. Administration of these funds typically follows the State Governor's administrative priorities.

In years past, DASH has secured discretionary State level funding to fund zero emissions rolling stock and infrastructure.

Examples of these discretionary programs include:

### Volkswagen Mitigation Trust Funds

Volkswagen Mitigation Trust Funds are mostly depleted in Virginia. As of the beginning of 2025, only ~$2 million remained unallocated for the state. For transit projects, these funds are distributed through DPRT MERIT. DASH has secured these funds in the past to purchase its initial set of six (6) battery electric buses and depot chargers in 2019.

DRPT's MERIT grant program funds public transit in Virginia. A portion of the grants are allocated for capital assistance, including state of good repair and capital expansion. For replacement buses, the City utilizes this program to secure reimbursement for all replacement buses that it funds in the CIP. It is important to note that the State has indicated willingness to ***reimburse for buses regardless of propulsion type***, including battery electric. However, our local ability to leverage this is limited by the amount of CIP funding "fronted" from other sources such as Cash Capital, GO Bonds, NVTC, etc., so as a result of these local policies, **Alexandria has not been able to leverage the MERIT program to its full potential**.

### NVTA 70% Funds

Applications for the NVTA FY 2026-2031 Six Year Program (SYP) have already closed as of October 2025. The SYP allocates NVTA's regional revenues for regional transportation projects. Examples of projects receiving this funding in the past include the Duke Street Transitway and some bus expansion, including eight electric buses. NVTA adopts an SYP every two years. The next SYP will be for FY 2028-2033, and the application will open in early 2027.

### Smart Scale Funds

DPRT is currently in Round 7 of Smart Scale funding for FY27. Transit projects must engage with DPRT directly by October 31, 2025, to meet the program's engagement requirement. Smart Scale funding is intended only for capacity expansion projects and not state of good repair. For example, projects that would procure new rolling stock for new or expanded high-frequency (20-minute headways or less) are eligible. Projects that would only replace diesel buses with electric buses are ineligible. DASH has secured two rounds of

Smartscale funding: one funds six (6) conventional expansion buses and the facility expansion, and another funds seven (7) battery electric expansion buses.

### Commuter Choice Funding

The Commuter Choice FY27-28 application is now open, effective October 2025. Applications must be submitted by 5:00 p.m. on December 12, 2025. DASH Routes 35 and 36 have received this funding in the past to expand frequency and purchase some electric buses. These two DASH projects have scored well in all previous funding cycles.

### Virginia Congestion Management and Air Quality (CMAQ)/Regional Surface Transportation Program (RSTP)

CMAQ and RSTP funds reimbursements for government alternative fuel vehicle purchases, including transit projects every year. The City has already programmed in $1,000,000 in CMAQ/RSTP funding in FY30, slated for bus charging infrastructure. DASH will work with the City to consider the funding needs of battery electric buses in CMAQ/RSTP applications moving forward. Keep in mind that DASH electrification needs will need to compete with and be prioritized with other City clean air mobility needs, so funding is not guaranteed. Furthermore, the current CMAQ/RSTP application cycle is for FY32.

## QUESTION #3

What is the right balance between continuing the pursuit of electrification and increasing service? *(Vice Mayor Bagley)*

## RESPONSE

Every dollar spent on increasing service reduces about 1.7 times more greenhouse gas emissions than the same dollar spent on fleet electrification. Compared to maintaining a diesel fleet, full electrification of DASH's fleet would cost an additional $80 million (about $6 million annually) and reduce emissions by about 4,600 tons of $CO_2e$ throughout the buses' lifetimes, assuming service remains at 2025 levels.

The total rolling stock equipment cost to electrify DASH's fleet is almost $200 million (about $16.5 million annually). The total cost to maintain DASH's current fleet as diesel buses would be about $120 million ($10 million annually). AThese costs only reflect what it requires to purchase the vehicles, and how much would need to be funded within the City's CIP, over a rolling 12 year period. It does not account for operating and maintenance, or overhaul costs across the lifespan of the bus.

Fleet electrification costs are driven both by the higher upfront cost of electric buses compared to diesel buses and by the limited range of electric buses. Electric buses can travel shorter distances after a full refueling and take longer to recharge than diesel buses.

DASH could achieve the same magnitude of emissions reductions by increasing service by about 114% compared to 2025 levels. This would cost $45 million more annually than the current service. Increasing service reduces carbon emissions by diverting single-occupancy vehicle trips to public transit. Increasing service by 114% would effectively make DASH buses carbon-neutral due to the diverted emissions from single-occupancy vehicles.

Note that while the annual additional cost of electrification is significantly less than the cost of increasing service by 114% ($6 million vs. $45 million), increasing service is still the most economically effective way to decarbonize. This is because the full carbon reduction of 4,600 tons of $CO_2e$ is spread out across 12 years of investment in electrification, while increasing service by 114% reduces 4,600 tons of $CO_2e$ in a single year.

DASH and its consultants calculated the costs and emissions reductions reported above, assuming a complete conversion of the diesel fleet to an electric fleet. No electrification was considered in the service increase scenario.

It is also important to note that the revenue sources for DASH's operating and capital expenses are different. The majority of DASH's operating expenses are funded by the City of Alexandria, with NVTC's Commuter Choice grants making up most of the other operating funds. DASH's capital funding for base bus replacement comes from the Capital Improvement Program (CIP), with supplemental funding electrification coming from NVTA 30% funds, the Virginia VW Environmental Mitigation Trust, and from the Federal Low-No grant program.

**Discretionary funding in general is - in essence - a lottery, and there is no guarantee DASH will receive grant funding for ZEBs in any given year.** Additionally, DASH relies on discretionary grant funding for numerous other capital expenses (facility state of good repair, facility expansion, charging stations, and others). As the pool of ZEB-specific funding shrinks and other general discretionary funds remain highly competitive, the ability to secure necessary funding should influence decisions about electrification. It is important to note that in current City budgeting practices, there is little to no permeability between operating and capital budgeting. This means savings in capital funding cannot be transferred to operating funding, and vice versa.

While electric fleets have higher upfront costs than diesel or CNG fleets, energy costs are lower for electric fleets on a per mile basis. Under normal circumstances, ongoing

operating and maintenance costs for battery electric buses (BEBs) are assumed to be slightly lower than those for diesel buses, which offsets some of the higher upfront capital costs.

Service increases can also lead to a multitude of benefits. The American Public Transit Association (APTA) estimates that every $1 invested in transit generates about $5 in economic returns. Increased bus frequency improves the quality of transit service, attracting higher ridership and leading to greater rider satisfaction. Higher bus ridership also means fewer single-occupancy vehicles on the road, which can alleviate congestion and improve safety for all road users. Finally, increased bus service supports equity goals by ensuring that high-quality, fast, and frequent transit service is available to everyone who lives and works in Alexandria.

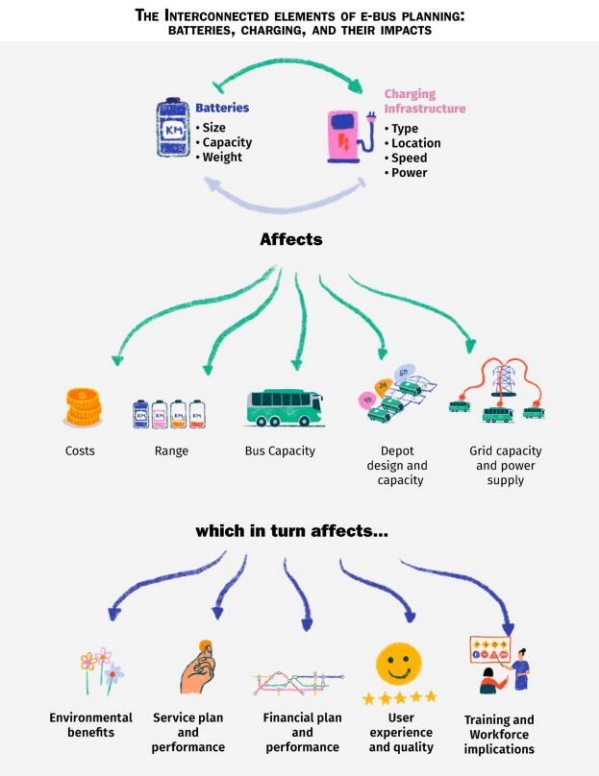
The appropriate balance for DASH is to continue electrification at a pace that aligns with normal fleet replacement and available capital funding, while prioritizing service investments that respond to demonstrated ridership demand. This approach ensures that electrification does not constrain near-term service growth, while positioning DASH to realize increasing climate benefits over time as the regional electric grid becomes cleaner.

## QUESTION #4

How are we working with and learning from other transit systems that are electrifying their fleet? *(DASH Board Vice Chair O'Connell and Board Member Kathpal)*

## RESPONSE

We can learn from other transit systems that are electrifying by comparing fleet sizes, funding opportunities, support, and unique challenges for DASH and across peer agencies.




DASH participates in a broad, multi-agency collaboration network to support its transition to ZEBs. These partnerships provide access to shared technical expertise, procurement lessons learned, maintenance practices, workforce development strategies, and peer review of fleet-transition planning. DASH's collaborators fall into three main categories:

1. National ZEB Partner Agencies are farther along in large-scale battery-electric bus deployment and offer valuable operational and technical insights. These partners provide benchmarking data on reliability, long-term cost of ownership, charging architecture, and yard redesign.
    - King County Metro (Seattle) – one of the nation's largest BEB adopters, offering lessons on charging strategies and fleet-wide transition planning.
    - TriMet (Portland) – early BEB pilot experience, battery performance data, and route-level modeling.
    - Spokane Transit / CapMetro / SARTA – mid-sized systems experienced with depot charging, winter operations, and cost modeling.
2. Similarly sized peer transit systems operate fleets similar in scale to DASH and contribute practical, comparable experience with BEBs in constrained operating environments to help DASH evaluate staffing models, charging schedules, maintenance workflows, and fleet availability impacts.
    - Blacksburg Transit
    - Mountain Line
    - Bee-Line (Westchester County)

3. DMV Metro Area Partners collaborate on similar regulatory, utility, climate, and funding conditions.
    - WMATA, Arlington Transit (ART), Fairfax Connector, Loudoun Transit, Montgomery County Transit (Ride On), Prince George's County TheBus, MTA Maryland, OmniRide, BWI Shuttle, DC Circulator


**DASH** has a fleet size of 101 as of 2023. The current fleet is 16% electric, with 16 BEBs already in service, and electrification is funded for 36% of the fleet. All funding for electrification has come from discretionary sources like federal Low-No grants, state funding programs such as the VW Mitigation Trust and STIP funds, and regional programs from NVTA and NVTC Commuter Choice. DASH does not receive direct federal formula funding through 5307 Urbanized Area Formula Grants, as WMATA is the recipient for the urbanized area. (The FTA 5307 grant program allocates funds to urban areas with populations of 50,000 or more to assist with operating, capital, and planning expenses.) DASH receives local funding from NVTA and the City's general fund, but the **City funds only the cost of diesel buses.** DASH must look to other sources for the remaining funding for electric buses, which can cost twice as much (or more) than diesel buses.

**Blacksburg Transit** (BT) in southwest Virginia has a fleet of 64 vehicles. Its current fleet is 16% electric and growing. Like DASH, BT has also received federal Low-No funding and VW Mitigation Trust funds. Unlike DASH, BT is the direct recipient of 5307 federal formula funds for the Blacksburg urbanized area. The agency has local dedicated funding sources from Virginia Tech, and its share of federal formula funds is about $4 million annually. BT prioritizes discretionary grants for funding electric bus purchases and utilizes formula funding with a local match provided by the University to cover any unmet needs.

Based on the agency's 2024 Strategic Plan, BT anticipates using formula 5339 State of Good Repair (SGR) funding to cover most of the transition to electric buses. SGR funding requires a 10% local match; the Strategic Plan estimates local funding for vehicle replacement and expansion to be around $4 million total from FY25-FY32, with the majority of that going towards replacement electric buses. Blacksburg's CIP allocates funding for bus replacement and expansion, and costs are based on current electric bus prices. The CIP does not indicate specific sources of funding, but state funds are the largest portion of bus replacement and expansion funding. Local funds serve as a match to these funds and to federal funds.

Blacksburg's most recent Five-Year CIP indicates that local funds contribute $3 million of the $32 million needed for fleet replacement and expansion. While Blacksburg is also heavily reliant on state and federal grants, BT has dedicated local sources in the Town and Virginia Tech to support electrification.

**Note:** *As of the publication of this document, direct conversations with BT leadership indicate they are reassessing their electrification timeline due to severe reliability issues with their electric bus fleet.*

**Mountain Line** (Missoula Urban Transportation District, or MUTD) in Missoula, MT, has a fleet of 36 vehicles. Its current fleet is about 50% electric. Mountain Line has also received funding from federal Low-No grants and the Montana VW Mitigation Trust; much of its funding for electrification also came from a mill levy passed in 2020 that raises an estimated $3 million annually. Missoula is a direct recipient of 5307 federal formula funds for the Missoula urbanized area; MUTD's share of funding is about $3 million annually.

FTA Low-No grants are the largest source of funding for Mountain Line's BEB transition. MUTD successfully won four Low-No grants between 2019 and 2023, with the largest contributing $10 million towards the procurement of 10 BEBs. *Historically, Mountain Line has had no in-state competition for these discretionary grants, resulting in its applications being the only feasible awards for federal funding.* Additionally, a 2023 $39 million Low-No grant is funding a new electric bus facility. Local revenues and the 2020 mill levy have supported these efforts by contributing to the local match for these grants.

Mountain Line's non-operating revenues come from property taxes (the mill levy) and federal sources – the City's CIP does not fund them. Missoula's property tax is a unique income stream that provides the majority of the transit agency's funding. DASH does not have access to a similar funding mechanism.

**Table** 1 summarizes the differences in electrification funding between DASH, Blacksburg Transit, and Mountain Line.

Table 1: Comparison to Blacksburg and Missoula Electrification Funding

| Date | Alexandria Transit Company (DASH) | Blacksburg Transit (BT) | Mountain Line (MUTD) |
|---|---|---|---|
| **Location** | Alexandria, VA | Blacksburg, VA | Missoula, MT |
| **Fleet Size** | 109 | 49 | 29 |
| **% ZEB Fleet** | 14% (16 BEBs) | 57% (28 BEBs) | 55% (16 BEBs) |
| **ZEB Funding Sources** | ■ NVTA 70%<br>■ FTA Low-No (5339c)<br>■ VA VW Settlement | ■ FTA Low-No (5339c)<br>■ VA VW Settlement<br>■ VA MERIT Funding<br>■ Local Dollars | ■ FTA Low-No (5339c)<br>■ MT DEQ VW Settlement<br>■ Local mill levy |
| **OPERATING FUNDING** | | | |
| **Access to Federal Formula Funding?** | No<br>(UZA funding goes to WMATA) | Yes<br>5307 recipient for Blacksburg UZA | Yes<br>5307 recipient for Missoula UZA |
| **Other Funding Sources** | | ■ Virginia Tech and the Town of Christiansburg cover 100% of BT's local match for operating | |
| **CAPITAL FUNDING** | | | |
| **Local Funding Support** | ■ City only funds costs of diesel buses through CIP | ■ Virginia Tech covers 100% of the local match for BEB purchases *(and all bus purchases)* | ■ Voter-approved property tax mill levy to support transit<br>■ MUTD is not funded by the City's CIP |

## QUESTION #5

Is Dominion prepared to support an all battery electric fleet, and how do their costs compare to the cost of diesel fuel? *(Council Member Elnoubi and DASH Board Member Harris)*

## RESPONSE

DASH's Facility Expansion Project, approved in the 2026-2035 CIP, has dedicated approximately $6 million of a Low-No federal grant to expanding the electrical capacity of the facility. This includes a 3-megawatt electrical service from Dominion to support bus charging infrastructure. This electrical service will support 24 charging positions utilizing high-powered overhead pantograph chargers. This is a substantial improvement to the electrical infrastructure that will help DASH overcome the limitations of the current facility's electrical service.

Based on available data, DASH staff estimates that energy costs associated with the battery electric fleet is $0.52 per mile, compared to $0.59 per mile with the clean diesel fleet. The parameters used to calculate these costs are based on actual total energy costs, and average fuel economy (and equivalent fuel economy) of the respective fleets:

## Cost Per Mile
### by Propulsion Type

**DASH's Diesel Fleet**

| Cost/Gallon | Miles per Gallon | Cost per Mile |
|---|---|---|
| $2.57 | 4.347 | $0.59 |

**DASH's Electric Fleet**

| Cost per Kilowatt Hour (kWh) | kWh per Mile | Cost per Mile |
|---|---|---|
| $0.13 | 4 | $0.52 |

As of 2026, the DASH Facility and Fleet operate under either Dominion schedule 100 or 130 under a VEPGA agreement. This is periodically reviewed and re-assessed by the City's Office of Climate Action. With this rate, it is generally correct that energy unit costs go down as usage volume goes up. Furthermore, there are demand impacts to the rate based on time of date, which will be managed with charge management.

## QUESTION #6

Are there opportunities with regional partners to procure equipment together to lower costs? *(DASH Vice Chair O'Connell)*

## RESPONSE

This was a topic that was explored in the DMV*Moves* Joint Procurement working group. While agencies and jurisdictions are open to the idea, there are challenges: agencies must customize vehicles differently, and they are concerned about getting locked into (or out of) each other's timelines. The working group is continuing to explore the feasibility of joint contracts. The group will expand the work it already does to pursue consolidated buying power on other, easier, lower-hanging fruit like IT software or specialized mechanics.

A variation of this idea is to **consolidate grant proposals and applications to combine the needs of multiple localities to increase the likelihood of a grant award**. Recently, WMATA has approached DASH to pursue a joint application for Low-No funding, which combines two potentially weak applications into one strong one. DASH was open to this idea, but there was not enough time to execute it at the time. This is an opportunity to increase funding and streamline and consolidate bus specification requirements.

## QUESTION #7

Can we rent/lease zero-emission buses, batteries, chargers, etc.?
*(DASH Board Member Gajjar)*

## RESPONSE

**At present, there are no known opportunities to lease zero-emissions buses aside from the secondhand market**. Now-defunct bus OEM Proterra once offered a financing program to finance the cost of the batteries of the bus over its lifetime. However, conventional City budgeting processes between Annual Operating and CIP have a layer of impermeability between operating expenses and capital expenses, which makes it difficult to capitalize on alternate models such as this.

On the facility and infrastructure side, variations of this model exist. An example is Montgomery County's Brookville Garage, which is privatized to Alphastruxure, enabling the private party to sell energy as a service (see **Question #12** for more details). This model has pros and cons, but DASH and the City have not needed to explore private-public partnerships on the infrastructure side, mainly due to its success in securing State and Federal funding for ZEB infrastructure.

However, for this to be feasible, the City must find a way to introduce permeability between its operating budgeting and its capital budgeting processes. At present, any savings on the capital program are unable to be realized or credited on the operating side, and vice versa. Alternative financing and partnership models rely on being able to flex funds quickly and easily.

# Zero Emissions (Industry)

## QUESTION #8

How much does a charger, battery electric bus, etc. cost per unit? *(Mayor Gaskins)*

## RESPONSE

- A standard depot plug-in charger is roughly $150-$200K.
- A standard depot pantograph charger can range from $150 to $350K, depending on configuration, power, and vendor.
- A standard Battery Electric bus is approximately $1.3 million in FY25 dollars.

## QUESTION #9

What is driving up the cost of a BEB and can we expect the cost to continue to increase? *(DASH Board Members Kathpal and Gajjar)*

## RESPONSE

Many factors, including lithium battery prices, Buy America regulations, supply chain constraints, specialized components (i.e. HVAC systems, air compressors, etc.) and agency customization requirements influence BEB costs. The battery alone accounts for 30-40% of the total cost of a BEB. Battery prices were dropping from 2015 to 2022, but rose again due to higher mineral prices and limited domestic cell production.

Most globally competitive BEB manufacturers (BYD, Yutong, Zhongtong, Foton) are not currently Buy America–compliant for federally funded purchases. U.S. manufacturers, therefore, face a smaller competitive market, higher labor costs, and higher domestic component-content requirements. Volatility in the supply chain is tied to long lead times and parts shortages, especially those associated with electric propulsion components.

**BEB costs will likely remain in flux in the near to medium term.** Agencies may not be able to count on future price drops at the market level, but costs can still be controlled through strategies such as group procurements, order standardization, and foreign markets (https://www.brookings.edu/articles/paying-less-for-public-transit-buses/)

## QUESTION #10

Provide an overview of the state of the bus manufacturing industry and the challenges of Buy America. *(DASH General Manager Baker)*

## RESPONSE

At present, there are two primary bus manufacturers in the country which meet the requirements for Buy America compliance: Gillig and New Flyer. These manufacturers

represent an overall manufacturing throughput of 4,000-5,000 units per year, which has to meet the demands of the entire country. In addition, with the rapid shift of transit bus demand from conventional (CNG, diesel) to zero emissions (Battery Electric, Hydrogen), manufacturing throughput is further diminished as it takes longer and more resources to produce a battery electric bus than a diesel bus.

Various international manufacturers have expressed interest in entering the U.S. market, and DASH is supportive of facilitating those manufacturers into the market. However, imported buses must go through a rigorous process to adapt from their origin standards to meet American standards, which include Federal Motor Vehicle Safety Standards adoption and Altoona testing. Additionally, tariffs on the components used by these manufacturers are inflating the vehicle's purchase price.

## QUESTION #11

Why aren't we buying buses from the manufacturer used by Link Transit in Wenatchee, WA? *(Vice Mayor Bagley)*

## RESPONSE

Link Transit purchases its buses from a BYD plant in Lancaster, CA. BYD has been a subject of debate because they offer an opportunity to supplement the North American electric bus manufacturing market, but face challenges with Buy America and NDAA compliance requirements for federally funded projects. BYD (now known as RIDE) is being considered for DASH for non-federally funded projects, as DASH looks to diversify its battery electric fleet and leverage lesser burdened areas of the market.

Currently BYD/RIDE does not meet Buy-America Requirements as such no Federal Dollars may be used to acquire buses from this manufacturer.

## QUESTION #12

Why have we not pursued similar financing deals like Montgomery County to get zero up-front costs on charging infrastructure? *(Vice Mayor Bagley)*

## RESPONSE

Montgomery County entered into a contract with AlphaStruxure to construct a 6.5 MW microgrid through an Energy Service Agreement (ESA) contract structure, where AlphaStruxure provides Energy-as-a-Service (EaaS). In the EaaS model, AlphaStruxure handles the upfront financing, design, construction, and operation of the microgrid. The operator (Montgomery County) then pays AlphaStruxure for the power on a per-unit basis, plus a fixed monthly cost for the management of the grid. The benefit of this partnership

structure is that it eliminates the need for upfront capital, allowing Montgomery County to use operating funds to pay for the microgrid. Conventionally, ESA is considered an option to achieve infrastructure if an agency is short, absent of, or wishes to reduce upfront capital costs. However, DASH has been successful in securing over $15 million in upfront funding to build the necessary infrastructure needed to support a wide-scale electric fleet. This negates the need to consider ESA and enables DASH to focus on minimizing energy costs once at scale.

While an ESA eliminates the need for significant upfront capital expenditures, it does increase operating costs in the long term. AlphaStruxure typically requires a 20- to 30-year commitment, and the monthly energy service cost is higher than it would otherwise be because it does not charge upfront for capital costs. DASH has already fallen behind schedule in implementing the Alexandria Transit Vision network due to an inability to secure sufficient operating funds. On the capital side, DASH already won a large federal Low-No grant to fund the additional 3 MW electrical service from Dominion at the transit facility. Due to the increased operating strain that it would impose, as well as the already-funded electrical service that DASH has secured, an ESA deal similar to that between Montgomery County and AlphaStruxure may not be right for DASH.

Long-term, however, if the Council increases DASH's operating funds, a similar ESA may be a viable option to speed the procurement of charging infrastructure without the need for large upfront capital funding. When DASH's electric fleet exceeds the charging capacity provided by the funded 5 MW electrical service from Dominion, DASH and the City may want to consider working with AlphaStruxure or similar EaaS providers to increase charging capacity.

## QUESTION #13

Santiago and Bogota have 5,000-7,000 buses, but they are electrifying their fleet much more rapidly. Why aren't we electrifying at the same rate as them? *(Vice Mayor Bagley)*

## RESPONSE

Santiago's and Bogota's fleet electrifications are enabled by massive amounts of local investment, regional partnerships, private partnerships through bulk procurements of 200+ buses at a time, and the unique structure of transit services operated by multiple private operators beholden to strict public regulations. Both cities' transit agencies are responsible for overseeing the multiple private operators that serve the cities.

Both Santiago and Bogotá rely on a distributed ownership structure involving operators to spur fleet electrification. The following sources provide greater detail on the circumstances that have enabled Santiago and Bogotá to electrify quickly.

- https://www.sustainable-bus.com/news/santiago-chile-1800-electric-buses-2025/
- https://corporate.enelx.com/en/stories/2019/08/growing-fleet-electric-buses-chile#partnership
- https://www.ifc.org/en/pressroom/2023/ifc-s-first-investment-in-e-buses-globally-to-support-largest-e
- https://www.electrive.com/2025/05/14/300-new-electric-buses-arrive-for-santiagos-red-movilidad/
- https://www.wri.org/insights/countries-electrifying-bus-fleets-fastest
- https://transformative-mobility.org/wp-content/uploads/2023/05/Business-model-Bogota_EN.pdf
- https://corporate.enelx.com/en/media/case-studies/2022/09/electric-public-transport-bogota
- https://corporate.enelx.com/en/media/news/2024/01/colombia-doubles-down-commitment-to-zero-emissions-mobility

## QUESTION #14

Why aren't we buying buses from the same sources as Santiago and Bogota? *(Vice Mayor Bagley)*

## RESPONSE

Santiago and Bogota both rely primarily on China's BYD, Foton, and other non-American manufacturers that are not compliant with FTA Buy America requirements. These buses are significantly cheaper than electric buses available from Buy America-compliant manufacturers like Gillig and New Flyer. Still, the FTA prohibits American transit agencies from using federal funding to buy these buses. Tariffs on imports from China also complicate the situation, making the buses substantially more expensive to buy in America.

Prior to the updated Buy America requirements, transit agencies in some cities (Los Angeles, Albuquerque, Martha's Vineyard, and Indianapolis) had contracts with China's BYD to buy electric buses.

Most importantly, transit agencies in Central and South America have access to battery electric transit vehicles that do not meet Federal Motor Vehicle Safety Standards (FMVSS), which all buses operating in the United States are required to meet. This provides access to manufacturers such as Superpolo and Busscar, vehicles that would not be legal to operate in the United States.


In addition to regulatory constraints, foreign buses differ fundamentally from the vehicles operated by U.S. transit agencies in ways that would make fleet integration unusually costly and operationally complex. Their BRT-oriented designs include high-floor chassis, platform-height doors, and in many cases left-side boarding, all of which are incompatible with the curb-level, right-door infrastructure most used throughout American bus networks.

These systems also rely heavily on bi-articulated buses that are substantially longer than the 60-foot variety used in the U.S. - vehicles whose overall length exceeds legal limits in many states and municipalities, making them not only impractical to operate but in some cases outright prohibited on public roadways. Because these buses do not share components, subsystems, or even basic body structures with the Gillig and New Flyer models that make up most U.S. fleets, agencies would need to stockpile a parallel inventory of proprietary replacement parts to support a small, incompatible sub-fleet and dramatically increase long-term maintenance and warehousing costs. As a result, even aside from federal procurement rules, the physical characteristics of these buses make them impractical for integration into existing American operations without significant new infrastructure and ongoing support burdens.

## QUESTION #15

Why is DASH unwilling to pursue other sources of funding and financing to pursue the increased cost of electric buses? *(Vice Mayor Bagley)*

## RESPONSE

There are limited sources of funding available for American transit agencies to purchase electric buses. DASH's possible funding sources are further limited by the agency's unique circumstances, including the inability to receive federal formula funding. DASH has applied for, and won, many of the federal and state discretionary grants that can fund electric buses and charging infrastructure, including the FTA Low-No program, the Virginia Smart Scale program, DPRT grants, the NVTC I-395 Commuter Choice program, and various NVTA sources. DASH continues to apply to various capital discretionary grant

programs as funding becomes available. There are very few, if any, funding sources that are close fits for DASH that DASH does not pursue.

## QUESTION #16

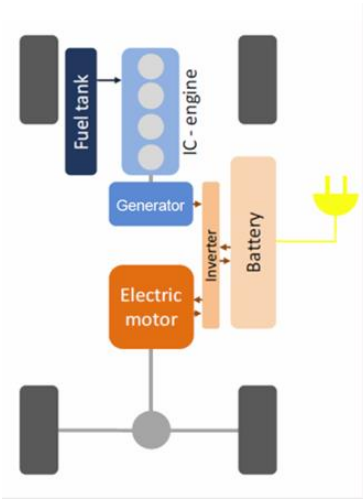
What are the differences in technology between older hybrid buses and modern hybrid buses? *(DASH Board Chair Kaplan)*

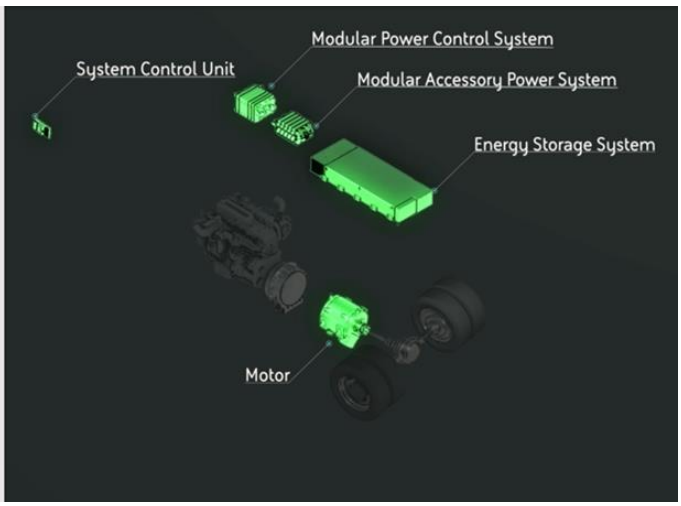
## RESPONSE

Legacy hybrid technology, including the hybrid buses that DASH has purchased in the 2010s, feature a **parallel** drivetrain system utilizing an internal combustion motor and stored on-board energy. While the on-board energy assists, the internal combustion motor never shut off, regardless of the power demand. Thus, while there are some fuel consumption reductions, it was limited.

Modern day hybrid technology is significantly different and improved, as they feature either a **clutched motor** drivetrain or **series** drivetrain, depending on the manufacturer. With either one, this permits the bus to achieve "engine-off operation", allowing the motor to shut off while at red lights, operating within pre-designated no emissions zones, or as conditions permit.

These buses would be capable of operating on exclusively battery power only in disadvantaged areas or areas with noise reduction goals such as Old Town Alexandria, Del Ray, etc. As a "partial zero emissions" technology, these buses have the opportunity to provide an intermediate step in the transition to a zero emissions fleet when funding is otherwise insufficient for battery electric buses.



# DASH Service

## QUESTION #17

What routes would you propose to cut in 2027 so that we would not need to purchase diesel buses but could instead purchase only electric buses? *(Vice Mayor Bagley)*

## RESPONSE

The response to Question 3 stated that the annual cost of fleet electrification is about $6 million more than maintaining the current fleet as diesel. To save $6 million from the operating budget, DASH would need to cut current service levels by about 16%.

Cutting service by 16% would undo all progress towards the Alexandria Transit Vision network and return DASH to about 2022 service levels. Beyond this, DASH is not well positioned to conduct another comprehensive systemwide evaluation, which would identify potential service cuts, even if conceptual.

# Closing: Next Steps and Key Actions

Based on the questions raised and responses documented in this white paper, several clear next steps and action areas emerge for continued coordination between the City, DASH, and the DASH Board:

1. **Maintain a balanced investment strategy.**
   Continue electrification at a pace consistent with fleet replacement schedules and secured capital funding, while protecting service levels and prioritizing service growth where demand and equity impacts are greatest.

2. **Strengthen alignment on funding strategy.**
   Coordinate early between the City and DASH on upcoming discretionary grant cycles (e.g., NVTA, Smart Scale, Low-No, CMAQ/RSTP) to ensure applications reflect shared priorities and realistic matching capacity within the Capital Improvement Program.

3. **Monitor industry and peer-agency developments.**
   Track reliability, cost, and procurement lessons from peer agencies - particularly those reassessing electrification timelines - to inform future decisions on technology, phasing, and risk management.

4. **Revisit financial flexibility over time.**
   As DASH's electric fleet grows and operating conditions evolve, periodically reassess whether alternative financing or energy-as-a-service models could play a role, particularly if operating funding capacity increases.

5. **Continue joint policy dialogue.**
   Use this white paper as a baseline reference for future City Council/DASH Board discussions, ensuring that decisions about service, capital investment, and climate commitments are grounded in shared data, transparent trade-offs, and clearly articulated constraints.

Together, these actions support a deliberate, fiscally responsible approach to advancing Alexandria's transit, mobility, and climate objectives while preserving DASH's ability to deliver reliable, frequent, and equitable service to the community.