

# Regional Technology Committee

Andy Macke, Chair

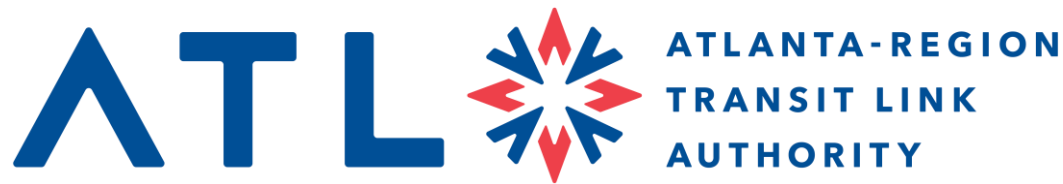
December 7, 2023

# Regional Technology Committee Meeting

## Thursday, December 7, 2023

### Proposed Agenda

- I. Call to Order – Andy Macke, Chair
- II. Approval of the Meeting Minutes for August 3, 2023
- III. Approval of the Agenda for December 7, 2023
- IV. Regional ZEB Fleet Transition Plan – Abby Marinelli
- V. Transit Tech Industry Survey – Abby Marinelli
- VI. Adjournment



# Regional ZEB Fleet Transition Analysis

Abby Marinelli

December 7, 2023

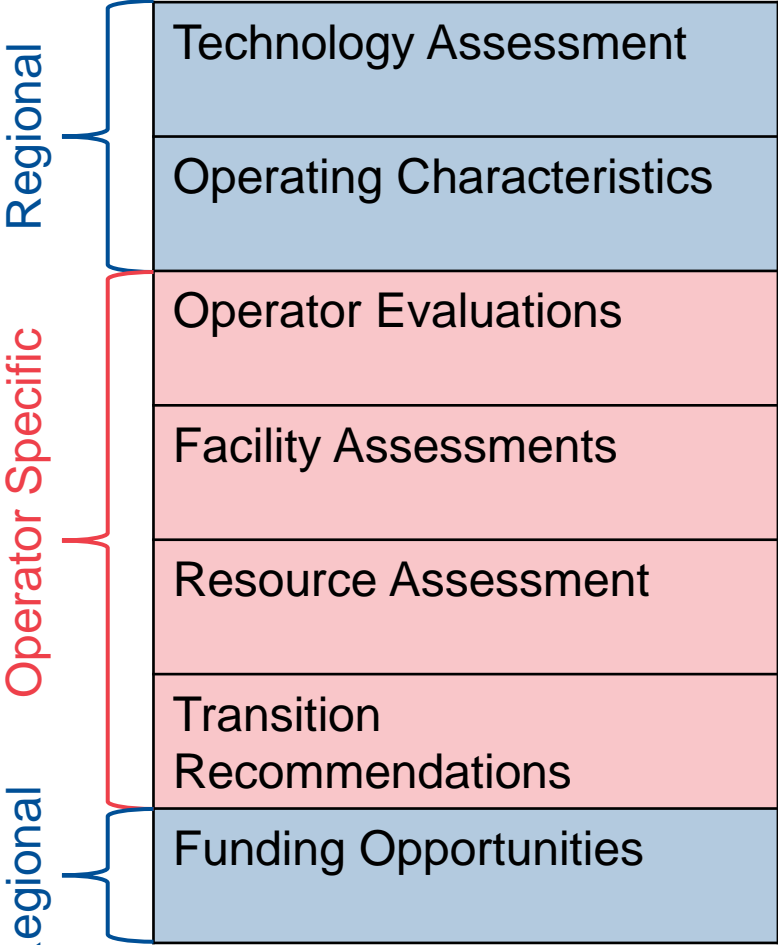
# ATL's Project Partners



MARTA is undertaking a separate analysis and those results will be incorporated when available.



# Scope Elements



## Regional ZEB Fleet Transition Analysis

The ATL logo consists of the letters 'ATL' in a bold, blue, sans-serif font, followed by a stylized starburst icon with red and blue points. To the right of the icon, the text 'ATLANTA-REGION TRANSIT LINK AUTHORITY' is written in a smaller, blue, sans-serif font, stacked in three lines.

# Operator Evaluations

## ► Data gathering

- Current fleet (make, model, age, condition, fuel consumption, annual mileage, etc.)
- Current service (routes, blocks, topography, passenger load, etc.)

### **For all operators in the plan:**

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Number of buses	>350, 1/3 of region's fleet*
Annual mileage	>1,000,000 miles
Annual fuel consumption	>250,000 gals diesel fuel

\*MARTA reported >750 vehicles in 2022 to National Transit Database.

# Operator Evaluations

## ▶ Fleet Assessment

- 45' commuter coaches
- 40' transit buses
- 25' cutaway buses

## ▶ Service Assessment

- Commuter routes
- Local bus with frequent stops

} Only fixed route, no demand response/microtransit/etc.

## ▶ Fuel Assessment

- Diesel (Baseline)
- Battery Electric Buses (BEB)
- Fuel Cell Electric Buses (FCEB)
- Did not analyze Compressed Natural Gas (CNG)

# Total Cost of Ownership Components

## ▶ Total Cost of Ownership includes:

- Vehicle procurement costs
  - Fuel/electricity costs
  - Maintenance costs
  - Infrastructure costs
- } Transition period from 2024-2044

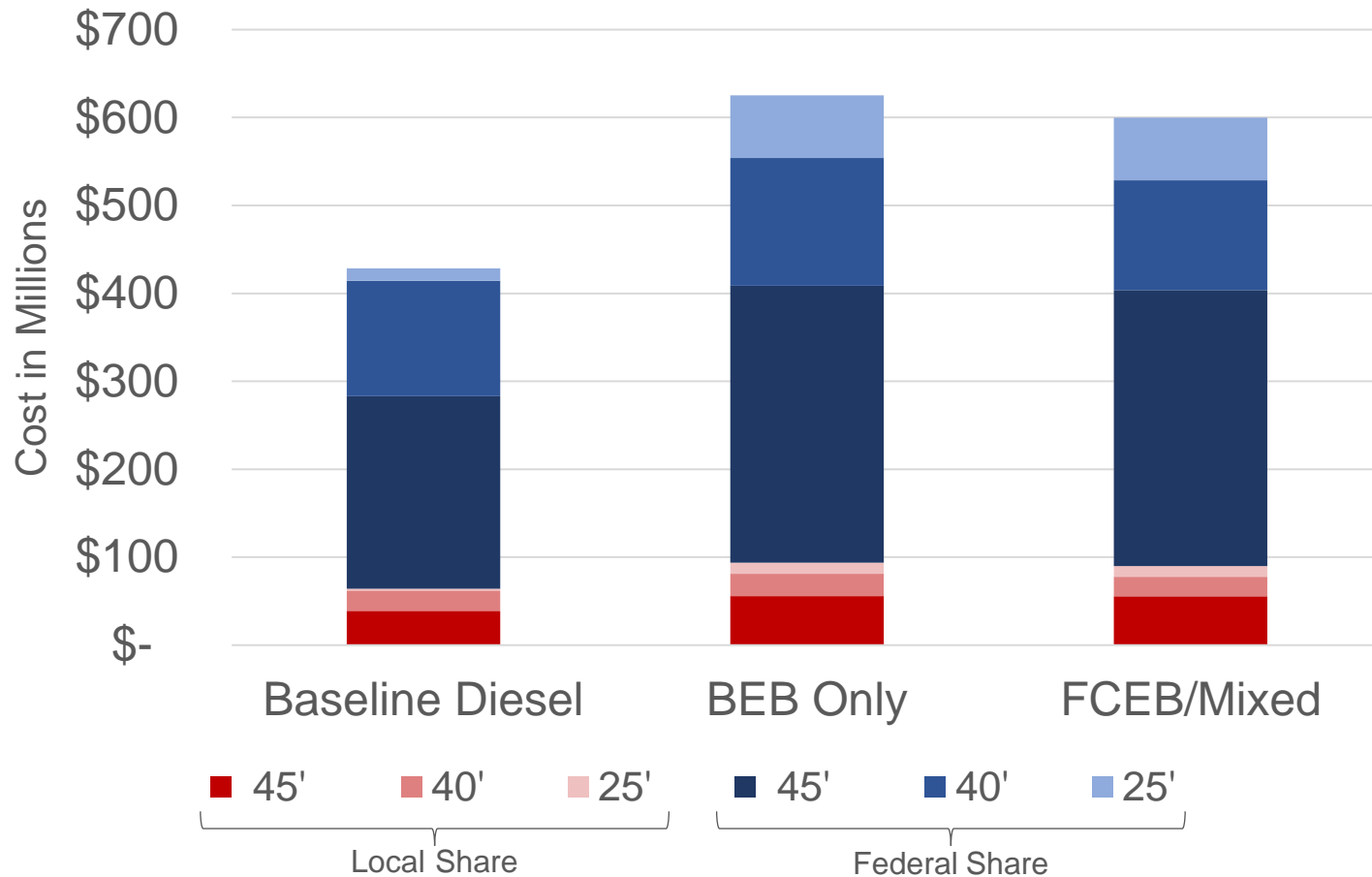
## ▶ Cost Shares

- Federal Share
  - From formula and competitive grants
  - Varies by cost type from 50%-90%
- Non-federal Share
  - From agency, state, and other funds
  - Varies by cost type from 10%-50%











# Cost of Vehicle Procurement

## Regional Cost of Vehicle Procurement 2024-2044



# Benefit/Cost Comparison

	Baseline Diesel	Battery Electric (BEB)	Hydrogen (FCEB)
FTA Compliant Vehicle Delivery	18 months	18-24 months	18-24 months
Time to Refuel/Recharge	10 min		
Operational Stability <sup>1</sup>	-		
Maintenance Benefits	-		
Environmental Benefits	-		
Est. Local Share of Capital Procurement (20 Years)	\$67 M	+ 46%	+ 40%

<sup>1</sup>Operational stability as compared to baseline represents the variability that battery electric vehicles experience in available power due to environmental and operational factors like ambient temperature, passenger load, terrain, driving style, etc.

<sup>2</sup>45' and 25' vehicles are in development and are expected to be available in the next several years



# Known and Unknowns

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## Knowns

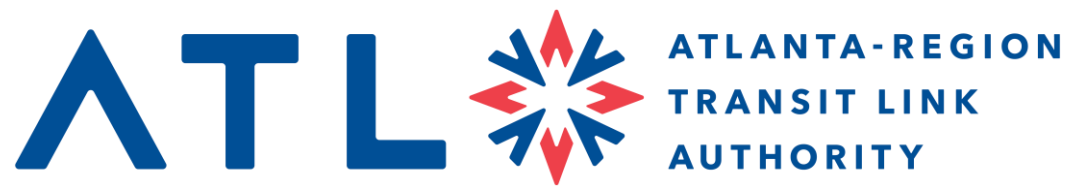
- MARTA has its own ZEB Plan
- Each agency has autonomy to implement changes at will
- Buy America compliant hydrogen-fueled buses are not yet available for commuter coaches
- Regional coordination can improve delivery timelines and costs

## Unknowns

- Overall business case for BEBs vs. FCEBs, including:
  - › Fleet & facility capital + operations costs
  - › Quantitative and qualitative benefits
  - › Potential of Federal funds to achieve parity with diesel
- Implementation factors such as:
  - › Schedules (procurement, construction, utilities coordination, availability of hydrogen fuel, etc.)
  - › Economies of scale with other transit providers
- Budgets of regional transit services to enable capital and operating fiscal impacts



**Questions?**



# Transit Tech Industry Survey

Abby Marinelli

December 7, 2023

# Why Transit Technology?

- ▶ Transit technology has advanced rapidly over the life of the ATL.
- ▶ The Transit Report showcases technology that provides both customer-focused and operations-focused improvements.
- ▶ Fast Forward will outline the implementation of these technologies over the next 20 years.

# Customer and Operations Focused

## Customer-Focused

Technologies that are design for, impact, and/or support making the transit system more intelligible and easier to use for customers.

## Operations-Focused

Technologies that are designed for, impact, and/or support more efficient, seamless, and integrated operations of the regional transit system.



# Transit Technology

## Customer-Focused

## Operations-Focused

ATL RIDES trip planning  
(GTFS, Automatic  
Vehicle Location)

Fare Payment Innovation  
(AFC2.0)

On-board Wi-Fi and Electricity

Real-time signage

Microtransit

Zero Emission  
Buses

Queue Jumps

Transit Signal Priority

Automatic Passenger  
Counters

Vehicle automation

Mobility as a Service

# Next Steps

- ▶ 2-3 presentations to the Technology Committee in 2024
- ▶ Track projects being implemented now
  - ATL RIDES
  - Microtransit in Gwinnett, Cobb, and the Airport
  - Automated Fare Collection 2.0
- ▶ Plan for implementation of new technologies in Fast Forward



**Questions?**



**ADJOURN**

**The Regional Transit Planning Committee Meeting Will Begin Momentarily**