

# MAKING CONNECTIONS, MAKING A DIFFERENCE

## Making Connections 2024

• The National Transit Workforce Conference

• November 11 – 13, 2024 • Baltimore, MD •





# Safety Briefing

- Note your location: Hilton Baltimore Inner Harbor, Floor 2.
- Identify your nearest exits.
- Automated system will alert attendees if we need to evacuate the building.
  - Use stairs, not elevators. Anyone unable to use the stairs will be assisted by fire department at the stairwell.
  - Our assembly point is Northwest Warehouse, 333 West Camden Street, just behind the Sports Legend Museum and adjacent to the ballpark.
- In the event of medical emergency, call 911 from a cell phone (if no cell phone, use house phone). Security (443-683-8801) will also assist. Hotel has qualified staff to perform first aid and operate CPR.
- To report emergencies to the hotel, dial 65 on a house phone.



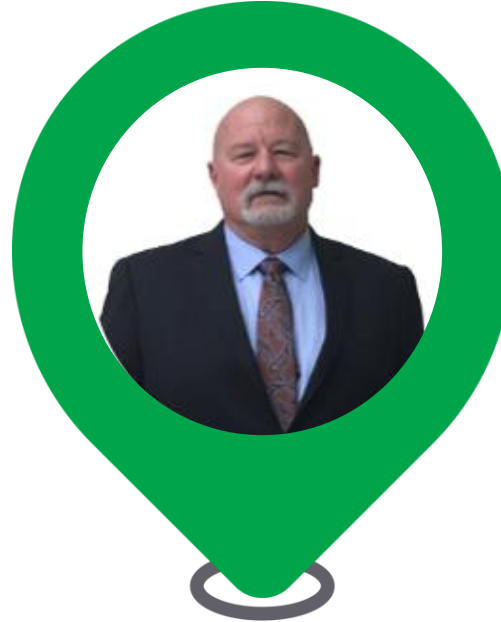
# Zero In and Power Up: Resources for a Smooth Workforce Transition to Zero-Emission Vehicles



# Moderators



**Jason Macumber**  
Senior Advisor for  
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*TWC*



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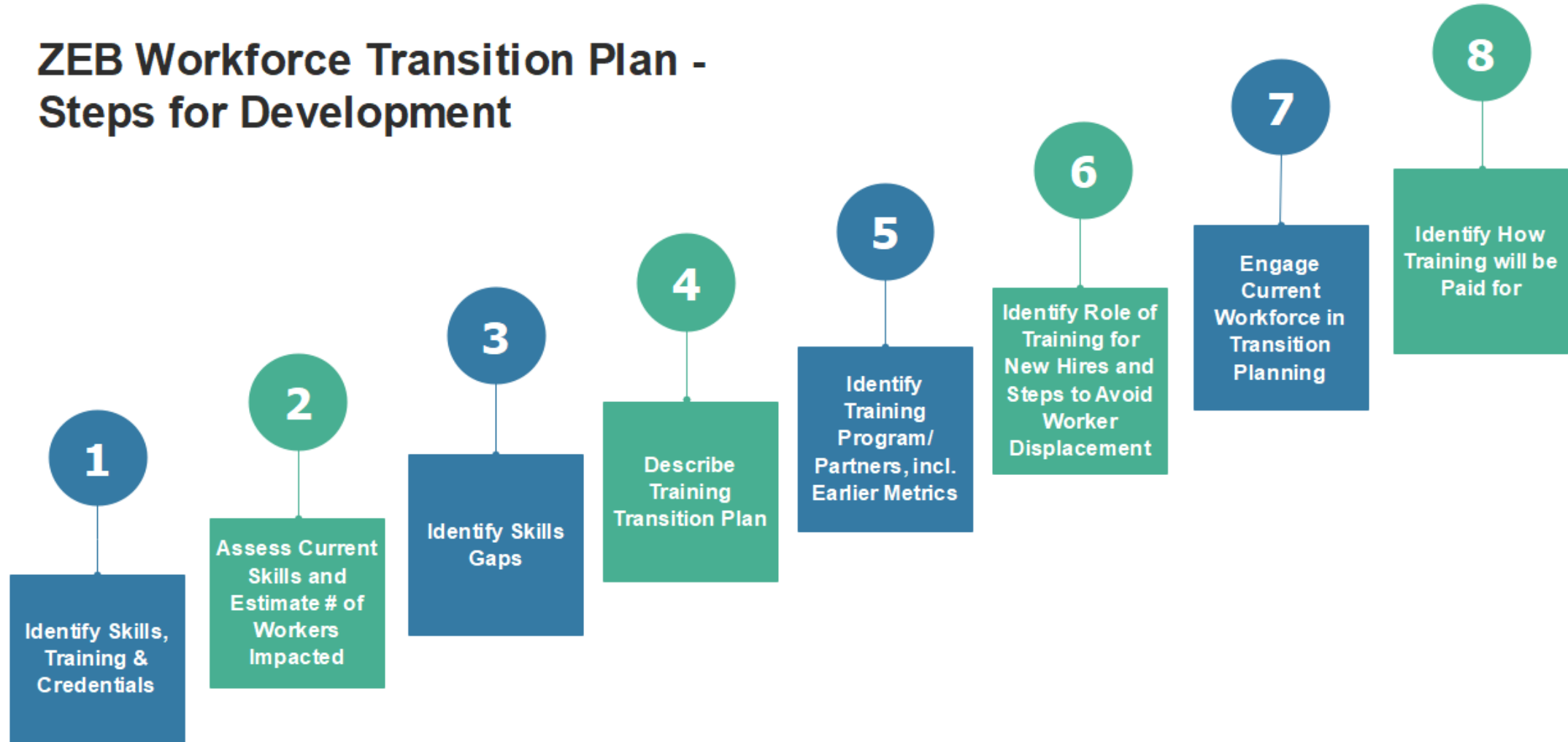
# Special Thanks to National Transit Institute (NTI)

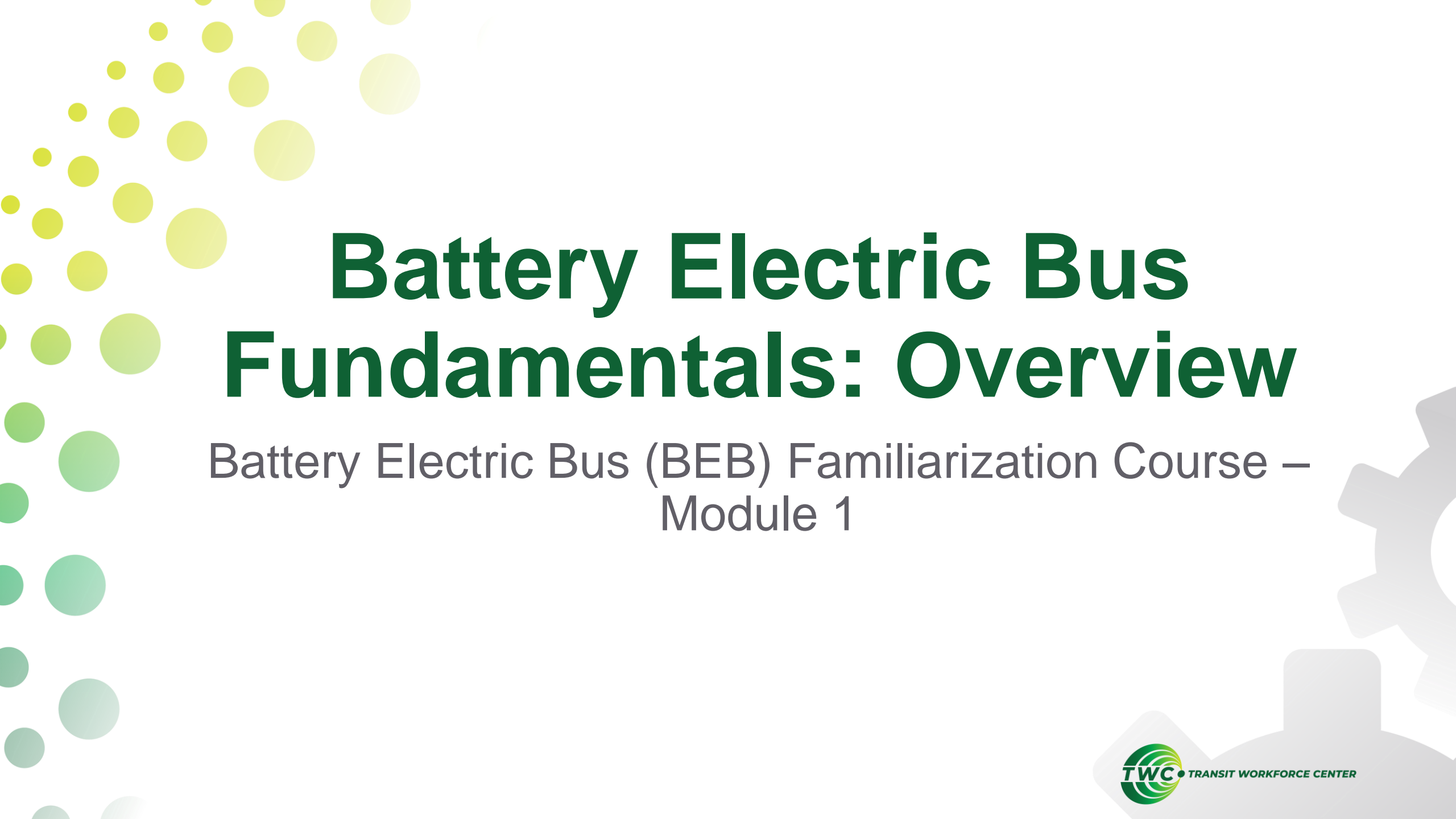


**Billy Terry**  
Director  
*National Transit Institute (NTI)*

# ZEB Workforce Transition Planning

## ZEB Workforce Transition Plan - Steps for Development



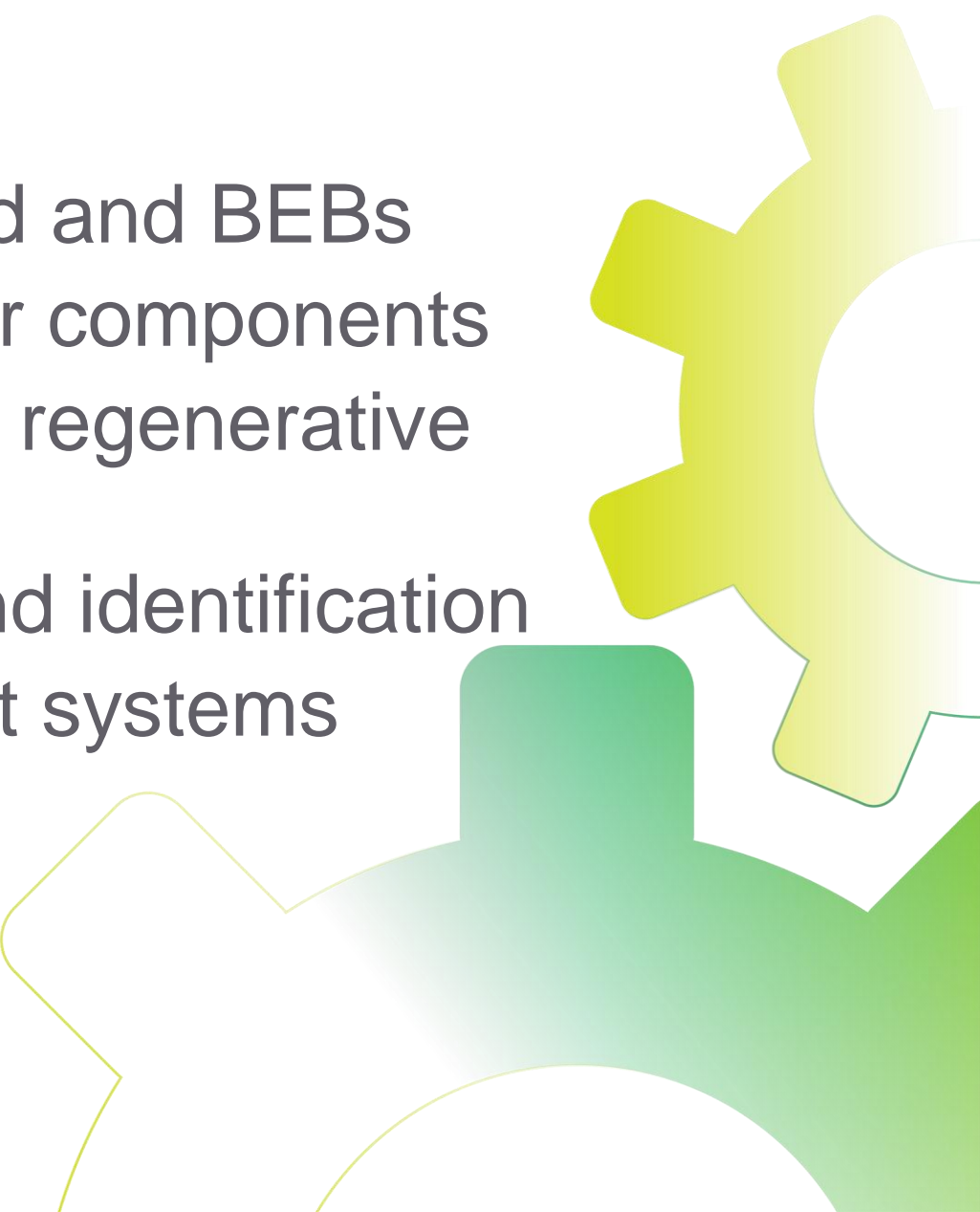


# Battery Electric Bus Fundamentals: Overview

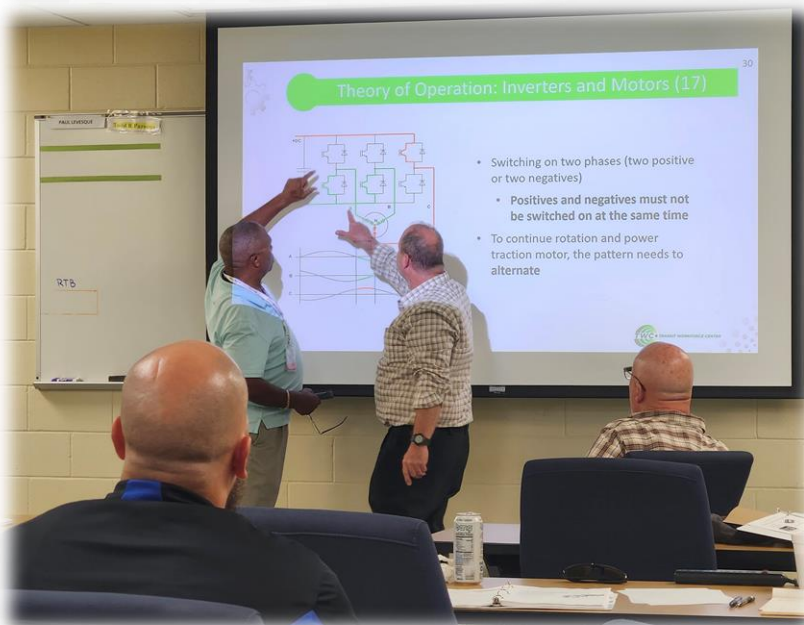
Battery Electric Bus (BEB) Familiarization Course –  
Module 1



# Module 1 Introduces

- Comparisons between ICE, hybrid and BEBs
  - Details of BEB systems and major components
  - Theory of operation & propulsion, regenerative braking
  - High voltage awareness, risks, and identification
  - Thermal and battery management systems
  - Data communications
  - Preventive Maintenance basics
- 







# Electrical Safety and Personal Protective Equipment

BEB Familiarization Course – Module 2





# Module 2 Introduces

- Electrical fundamentals and safety considerations
- Personal Protective Equipment (PPE)
- Safety and testing equipment
- De-energization of a BEB electrical system
- (Lock Out/Tag Out)





Attention!  
You are now  
entering a  
SAFETY  
ZONE

Class 0, High Voltage Gloves (78)

- Do not use nitrile shop gloves if you are working in and around HV, Class 0 Rubber Gloves are required.
- The color of the rubber can vary, but the color on the label is specified by the ASTM standard. Gloves can be multiple colors (orange, black, etc.), but they will always have the ASTM tag that defines the safe work limits: 1000VAC and 1500VDC in most BEB cases.
- As a best practice, leathers should always be worn over the rubber gloves to protect from nicks, scratches and cuts, as well as providing an additional layer of protection.





# PPE Demonstration

**We'll need two volunteers!**





# Equipment Demonstration

**We'll need two (new) volunteers**





# Battery Charging Technologies

BEB Familiarization Course – Module 3



# Module 3 Introduces

- Charging fundamentals
- Electric Vehicle Charging Standards
- Charging technology methods and details
- Brief Charging Precautions









# Resources

- [Transit Workforce Center](#)
- [TWC Battery Electric Bus Familiarization Course](#)
- [TWC Resource Center](#)
  - Search “BEB”



# Contact Us!



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