2021 WIPTA Conference
Battery Electric Buses: Lessons Learned
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“The Talk” – Preparing for Battery Electric Buses

- Step One: Denial (Why ME!?)
- Step Two: Reality sinks in. (Do I have a problem? Where do I start??)
- Step Three: Ask for help. (How are the BEB going to be used?)
- Step Four: (Write or approve a BEB RFP for buses and charging infrastructure.)
- Step Five: Are we ready for BEB?
- Step Six: Reach freedom and stay there.
Design Phase
Try, Try, Again!
Step Two: Where do I start?

Reality sinks in. Where do I start? Do I have a problem?

- Get Help!
- Call other Transits Properties for their ideas and lessons learned.
- Speak with bus builders.
- Ask for references.
- Trust, but verify.
Step Three: Ask for Help

- Hire additional internal staff.
- Because you will have a REAL PROBLEM, ask for professional assistance.
- Hire a professional engineering firm.
- For example, MCTS and Milwaukee County hired:
  - HNTB
  - AECOM
  - M.J. Bradley & Associates
  - Allume Architects
Step Four: Write or approve BEB/Charging RFP

- Do you have a bus RFP that you can use?
- Can you obtain a copy of a BEB RFP from another Transit Property?
- Always remember the "Three Rs of Maintenance."
  - Review, Review, Review.
- Trust, but verify.
Step Five: Are you ready for BEB?

- Measure once, check twice?
- What new systems or equipment are required to support BEB?
- In addition to the costs of the BEB vehicles and BRT platforms, did you plan for additional and unforeseen costs?
  - Examples:
    - New Electrical Infrastructure for Depot and or In-Route Charging
    - New bus lifts, new doors, new HVAC system
    - New Training Requirements for staff and First Responders
    - New PPE and testing Requirements for said PPE
Step Six: Reach Freedom and stay there

- Continue to review, remeasure, and test as the BEB plan develops.
- You may know the dimensions, features and end use of the bus. Do not assume anyone retained to assist will have that knowledge or end use.
- Continued communication with the BEB vendors from the RFP award through the actual delivery and final testing.
- Finally: Always have a contingency plan for success!
Depot and in-route chargers
Coming Soon to Milwaukee!

Nova Bus LFSE+ (driven by BAE Systems)
Thank you!