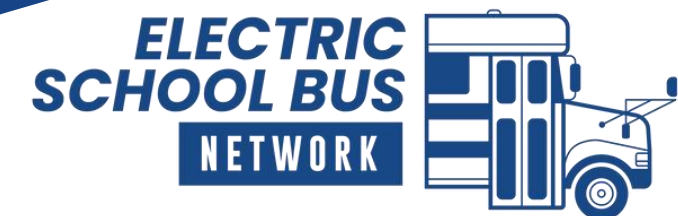


Electric School Bus Network National Forum

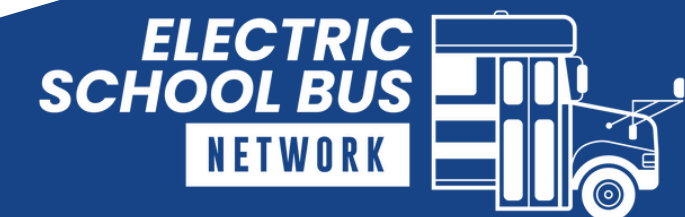
Data Collection
May 8, 2024



May 8, 2024

Forum Agenda

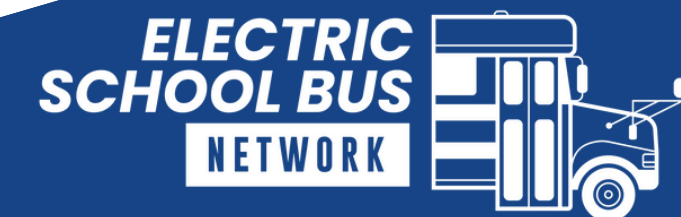
- 01.** Intro to the Electric School Bus Network
- 02.** Data Collection
- 03.** Q&A
- 04.** Summary and Closing





Electric School Bus Network

The **Electric School Bus Network** accelerates **nationwide school bus fleet electrification** through **peer-to-peer networking** and **dialogue-driven forum meetings** for school districts, advocacy organizations, government organizations, and industry representatives. The ESB Network provides access to educational tools, resources, and subject matter experts to help **support the electric school bus fleet transition**.



Meet the ESB Team



Rachel Chard
Deputy Director



Michelle Hanson
Program Manager



Ian Fried
Lead Project Manager



Alise Crippen
Lead Project Manager



Chrystal Ales
Project Manager



Emily Gasca
Project Manager



Katelyn Tomaszewski
Project Manager



Skyler Potocek
Project Manager



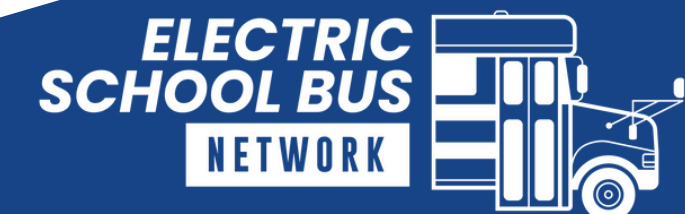
Sarah Stalcup-Jones
Project Manager



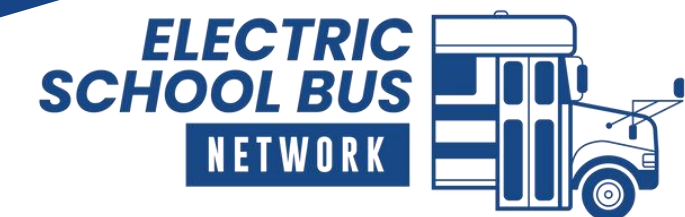
Juan Espinoza
Project Manager



Liza Walsh
Project Manager



Data Collection





What is data collection?

- Process of gathering and measuring information on specific variables systematically
- With the aim of answering questions and evaluating outcomes

What collects the data?

Telematics devices, plugged into your OBD-II port, enable data collection for vehicles including:

- Engine RPM
- Engine light
- Seatbelt
- Odometer
- Engine hours
- Emissions
- Vehicle identification number (VIN)
- 12v vehicle battery voltage for an ICE vehicle
- State of Charge (SOC) for an electric school bus



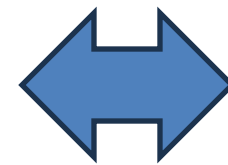
How is data collected?



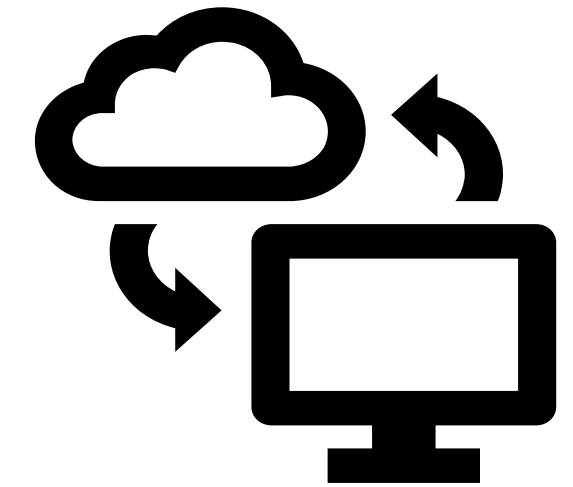
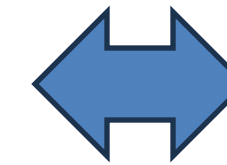
Telematics device collects information via CANbus often via OBD-II port



Telematics device sends data to the cloud



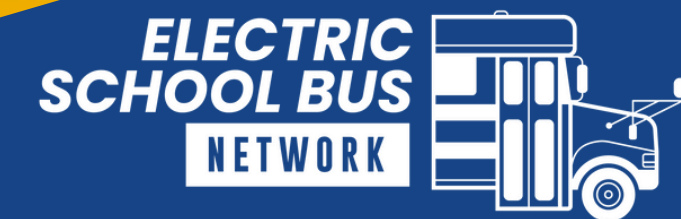
Telematics cloud server stores data



User can access data through interface or API integration

Why are we collecting data?

- Overall fleet management
- Optimize routing
- Maximize energy efficiency
- Identify safety and maintenance issues earlier
- Improve driver operations



What data is available?



Speed

Route Time

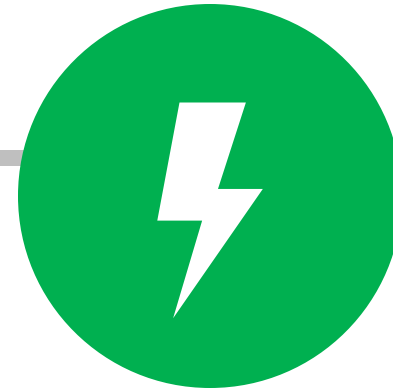
Idling Time



GPS Location

Routing

Temperature



Energy Consumed

Energy Charged

State of Charge
(SoC)



Maintenance Alerts

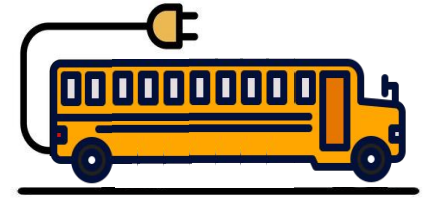
Types of Telematics

Third-party Telematics
Systems
(Geotab, Zonar, etc.)

Built-in OEM Systems
(dependent on OEM)

Choose depending on bus compatibility and your
data priorities

BOSTON PUBLIC SCHOOLS MASSACHUSETTS



- Electric School Bus Model: 2022 Blue Bird 155 kWh
- # Electric Buses in Fleet / Total # School Buses: 20 of 750
- Project Start Date: 2022

- Data Partner(s): GeoTab, Zum, Zonar
- Data Use:
 - EV bus battery charge % monitoring;
 - GPS time and location tracking;
 - Driver/Monitor timekeeping tap cards;
 - Support for incident tracking (eg, signal that crossing lights on, door open)

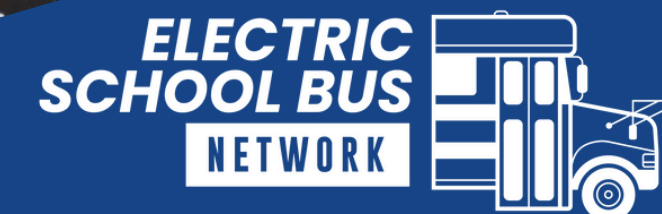
ELECTRIC
SCHOOL BUS
NETWORK



Questions?

Thank You for Participating

- A follow-up email will be sent **Friday, May 10** with the following:
 - Recording of the meeting
 - Copy of the slide deck
- The ESB Network Newsletter will be sent on **Tuesday, May 14**
- Enjoy your summer!
 - **The next National Forum is TBD**
- Please email schoolbusteam@calstart.org with questions for our team



www.electricschoolbusnetwork.org

