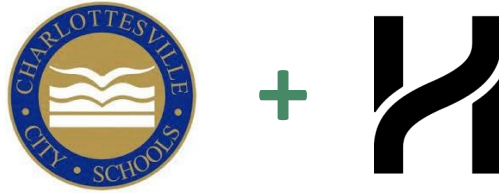




Highland



Charlottesville City's Case for School Bus Electrification

Table of Contents

Part I

- I. Introduction to Highland
- II. Charlottesville City – Type-A Bus Proposal
- III. Why Go Electric?

Part II

- I. Feasibility of the Type-A EVSB Proposal
- II. Highland's Experience in School Bus Fleet Electrification
- III. Summary and Recommendation to the Charlottesville City School Board



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Introduction to Presenters



Mr. Gerald Chessman (“Jerry”)
Regional Business Manager
Mid-Atlantic Region

Past Experience

Asst. Superintendent, Administrative Leadership Roles,
Teacher
Woodland Hills School District, Pennsylvania

Education

University of Pittsburgh



Mrs. Siobhan Nicklow
Fleet Advisor
Mid-Atlantic Region

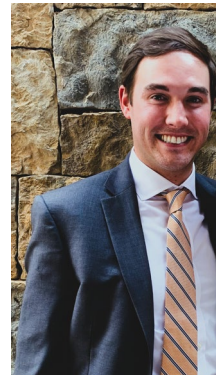
Past Experience

Transportation and Food Services Director
Woodland Hills School District, Pennsylvania

Pittsburgh Municipal Government
Higher Ed., Retail and Corporate Food Service Director

Education

Community College of Allegheny County



Mr. Benjamin Foley (“Ben”)
Fleet Solutions Manager
Mid-Atlantic Region

Past Experience

Renewable Energy (Wind, Solar, Battery) Development
CPV

Infrastructure Finance
DFC

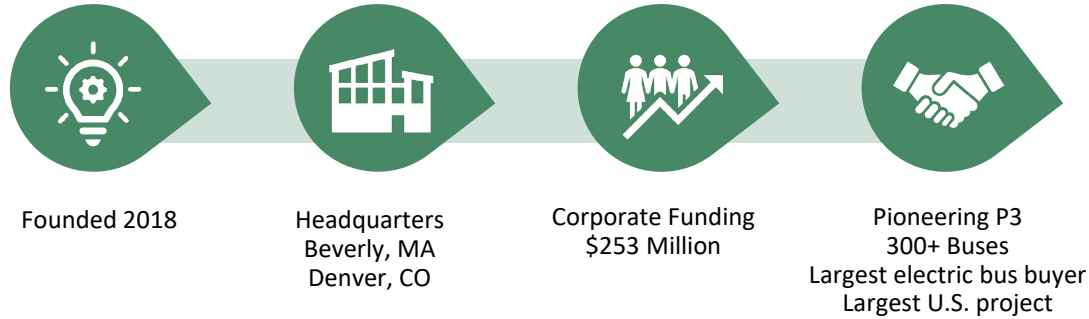
Education

University of Virginia

Introduction to Highland Electric Fleets



The Highland story



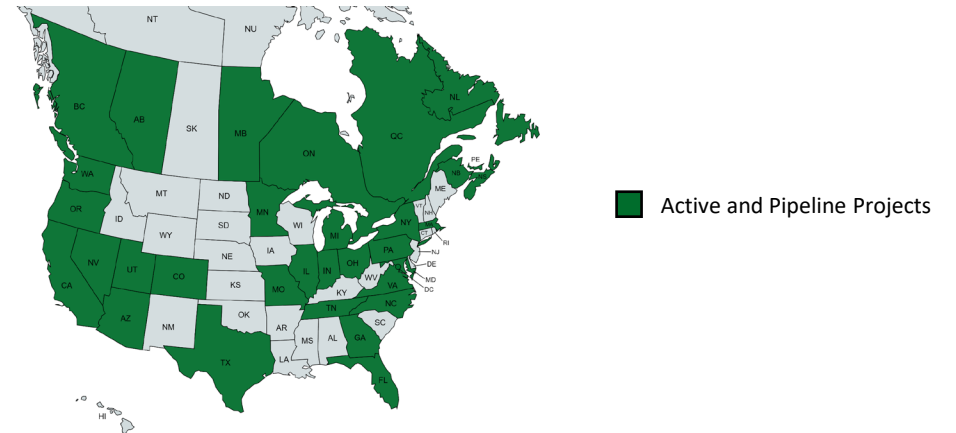
What we do



How we do it

- Evaluate Charlottesville's EV feasibility**
 - Ability for budget-neutral fleet turnover
 - Assessment of physical infrastructure needs
- Enter a procurement process for our services contract**
 - Structure services agreement within local guidelines
 - Propose contract price, net of grants and incentives
- Deliver turnkey solution for the next school year**
 - We plan, finance, and build the project
 - Manage vehicle charging, ensuring full tank

Where we are



Highland Handles Projects of All Sizes



So. Burlington, VT

4 Buses
4 Chargers
1 Depot

Peak2Peak, CO

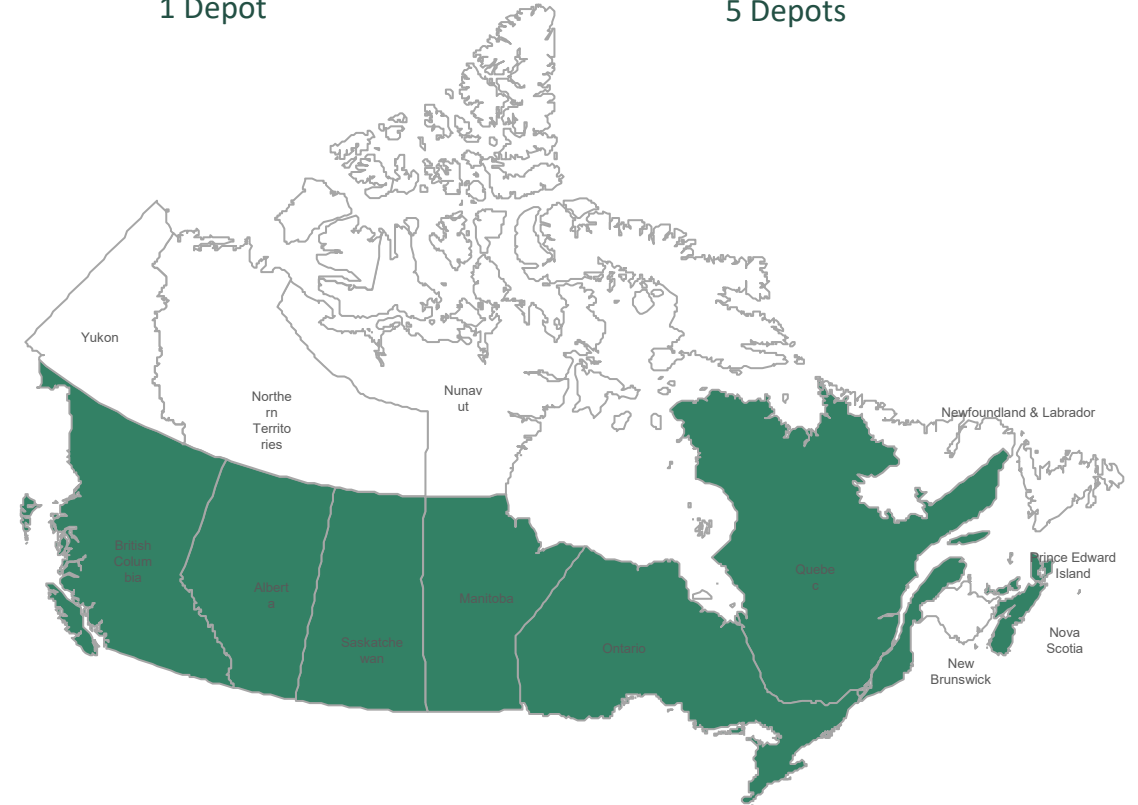
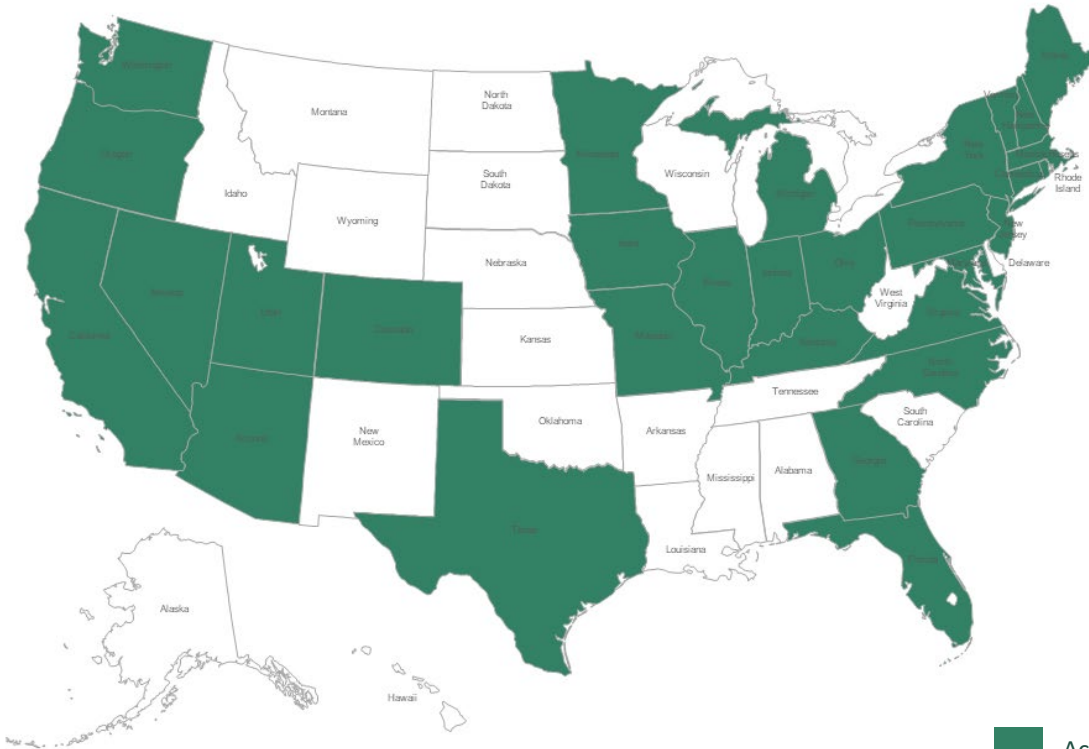
4 Buses
5 Chargers
1 Depot

Beverly, MA

5 Buses
5 Chargers
1 Depot

MCPS, MD

326 Buses
111 Chargers
5 Depots



Active and Pipeline States & Provinces

Charlottesville City Schools – “Defining the Project”



Problem 1: Drivers

Charlottesville is experiencing the same issue as other school transportation operators across the United States: CDL driver shortages.

Solution

Charlottesville City Schools is proposing a creative solution to address its need for school bus drivers:

Deploy Type-A school buses that fall below CDL requirements, and employ School staff members as drivers.



More than 30 Charlottesville staff members have expressed interest in the program!

Problem 2: Technology Selection for New Vehicles

Should the City deploy gas or electric Type-A vehicles next year?

Solution

Electric school buses solve the many well-known challenges of ICE vehicles. Charlottesville will benefit from all that EVs have to offer should it choose to upgrade to electric:

Gas vehicles are noisy, dirty, and unpredictable; EVs are quiet, clean, and reliable.

And Highland will take care of all the costs, complexity, and uncertainty around electrification for, and on behalf of, Charlottesville.

*With Highland, Charlottesville City can deploy EV school buses **efficiently, cost-effectively, and free of complexity** – Charlottesville’s EV school buses will be fully charged every school day, and the City will know exactly what a Type-A EV will cost during the contract term.*



Charlottesville City's Case for School Bus Electrification

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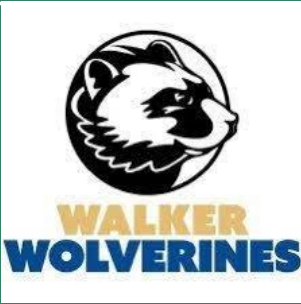
Part II

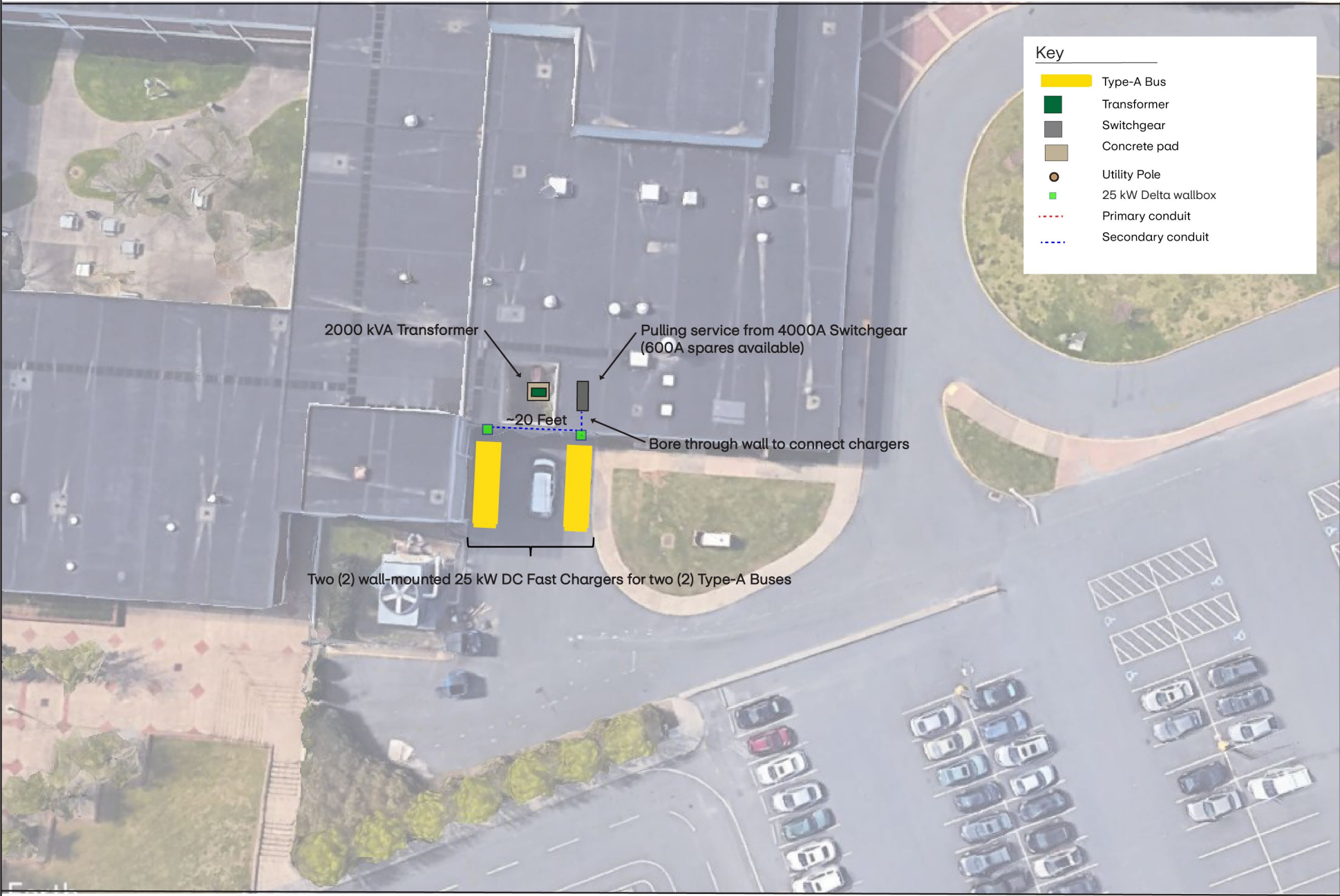
- I. Feasibility of the Type-A EVSB Proposal
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Type-A Electrification Initiative – What is the Plan?



In 2022/23, the proposal is two (2) Type-A electric school buses at the following locations in the Charlottesville City School System





Description

Highland to install two (2) 25 kW DC fast chargers at Charlottesville High School for two (2) Type-A EVSB's in 2022.

Design to be finalized in coming months. This option represents preliminary design subject to change.

Equipment Selection

25 kW Delta wallbox or similar

Electrical Input

Input Rating 1) 240 VAC, Single-phase
Input Current 1) 165A 240VAC @ 60Hz

Input Rating 2) 480 VAC, Three-phase
Input Current 2) 40A 408VAC @ 60Hz

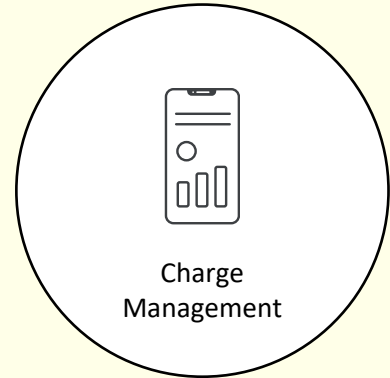
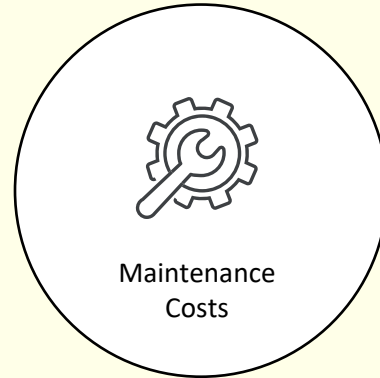
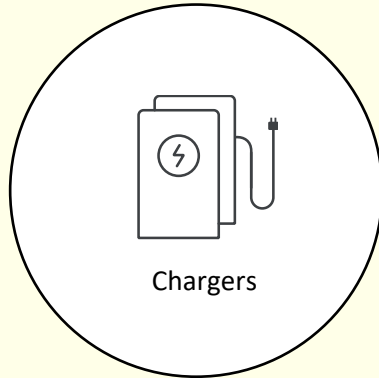
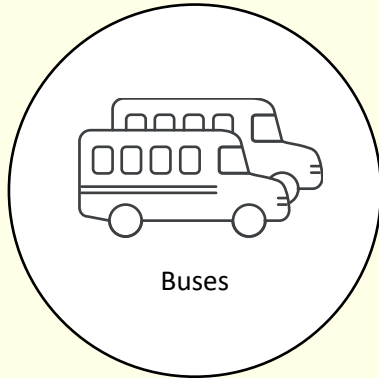
Input Rating 3) 208VAC, Three-Phase
Input Current 3) - 90A, 208VAC @ 60Hz

Electrical Output

Output Power Capability - 25kW
Output Voltage - 50-500 VDC
Charging Module - Multiple Options

A Partnership between Charlottesville and Highland
The Challenges of Fleet Electrification, and the Highland Solution

What do you need to electrify a depot?

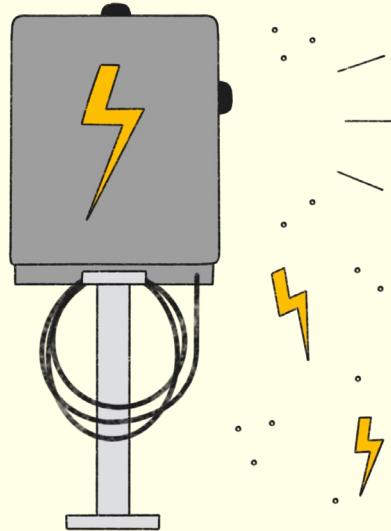
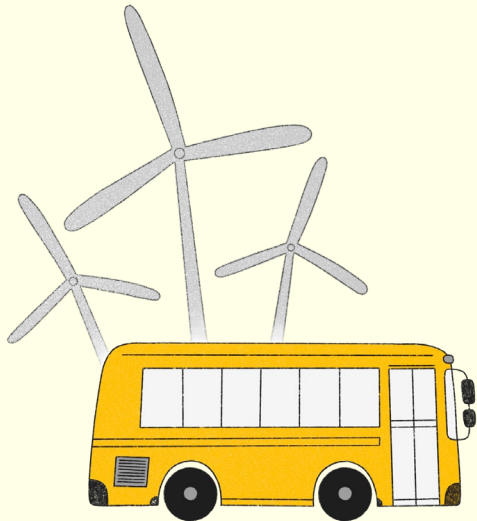
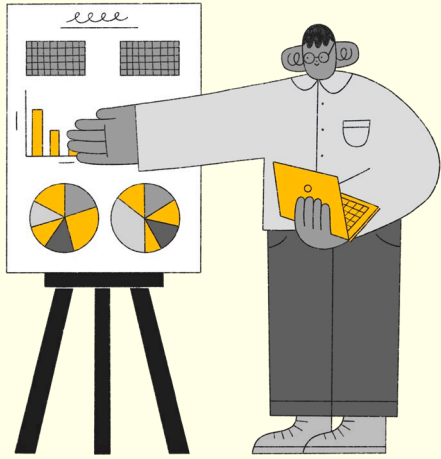


Highland's Services Contract Includes



A Partnership between Charlottesville and Highland

How does the Highland Model Work?



1 Plan

We design and implement the entire project.

2 Budget

We create a subscription plan that includes all your buses, chargers, and depot improvements.

3 Build

We procure the school buses and manage the construction of depot upgrades.

4 Train

We train your team to use and maintain your fleet.

5 Charge

We charge the school buses during off-peak hours, ensuring a “full tank” before each trip.

6 Maintain

We provide a complete service plan, reimbursing for all repair costs, including parts and labor.



A Partnership Between Charlottesville and Highland

Highland's Experience in School Bus Electrification

MCPS, Maryland

Montgomery County Public Schools partnered with Highland to deploy the largest electric school bus fleet project in North America.

Over four years, Highland will provide 326 buses across five depots. Today, MCPS has taken delivery of its first buses, supported by changing infrastructure for 45 buses at their Bethesda depot.



Beverly, Massachusetts

We partnered with Beverly's Transportation Director, Dana Cruikshank, and his team to implement a 2-bus pilot that's now expanding to 30 buses.

Beverly selected Thomas Built Saf-T-Liner® C2 Jouley® for their fleet, designed to their specifications.





Charlottesville City's Case for School Bus Electrification

Summary and Recommendation to the Charlottesville City School Board

Deploy Type-A Non-CDL Vehicles

- ✓ Creative solution to the driver shortage
- ✓ Build community for teachers and students

Upgrade to Electric Type – A School Buses

- ✓ Advantages versus ICE equivalents
- ✓ Clean, quiet, reliable
- ✓ Cost-effective solution long-term

Partner and Collaborate with Highland

- ✓ Experience
- ✓ Scale
- ✓ Customer Service and Support