



E-Mobility Demonstration Project

Success Story: Non-Trenching Bus Fleet Electrification

Project Partner:
First Student

Location:
Brooklyn, NY



Overview

Con Edison partnered with First Student through the Cost Optimization for Fleet Electrification (COFE) Demonstration Project to evaluate scalable ways to lower the Total Cost of Ownership of medium- and heavy-duty vehicle fleets. First Student, the largest school bus operator in North America, is dedicated to advancing school bus electrification and providing students with cleaner, healthier, and more sustainable transportation. The demonstration project serves as a proof of concept for how cost-saving technologies can support electrification across the First Student fleet and the 125,000 medium- and heavy-duty vehicles in New York State.

Phase 1 electrified 10 school buses in Brooklyn and Queens by installing 12 fast chargers using First Charge, an innovative, above-ground infrastructure design that avoids trenching. Instead of digging underground, the system runs conduit over cement barriers, which reduces project complexity, costs, and operational disruption. The non-trenching design also helps avoid costly delays caused by underground obstructions, a common issue at fleet depots. Its modular setup adds flexibility and future-proofing, since the equipment can be relocated or expanded more easily and integrated with different technology providers.

Data & Results

Phase 1 cost and schedule data were compared with conventional trenching-based installation estimates. During the limited trenching work required for the demonstration, crews encountered several underground obstructions. By extrapolating the cost of those obstructions across the site, the team found that **the non-trenching approach delivered 19% overall cost savings and accelerated the project timeline by 4 weeks.**

Overall, the project shows that non-trenching charging infrastructure can lower implementation costs, improve predictability, and support faster fleet electrification. It offers a practical path for fleet operators transitioning to electric vehicles while helping reduce diesel emissions and improve air quality in the communities where students, drivers, and residents live and travel.



Underground Trenching Obstructions

Non-Trenching Bus Fleet Electrification

Highlights

Total Project Cost:

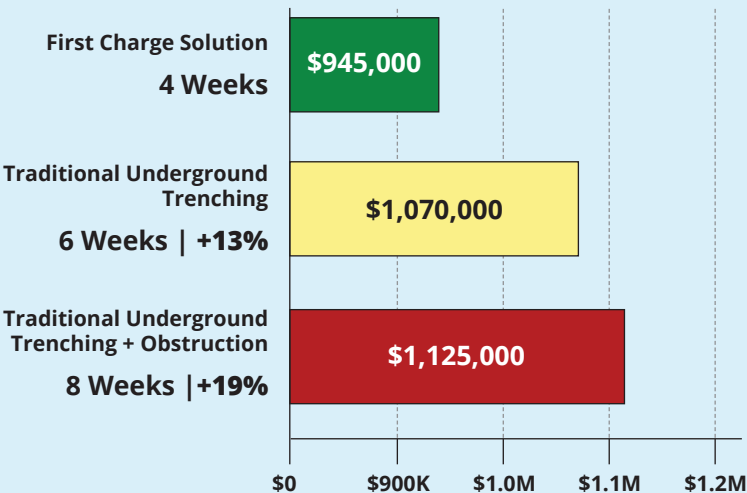
\$3,000,000

Upgrades Implemented:

12 Charging Stations
10 Electrified Buses

Charger Installation Cost & Time Comparison

First Charge Solution offers lower cost and shorter installation time.



Testimonial

“I like not having to stop and refuel. At the end of the day, I just plug the bus in. It drives smoothly and is comfortable, and because it’s quieter, I can hear the students better. There are no diesel fumes, and many parents on my route are happy their children are riding on an electric bus.”

—Krizia, Driver, Quality Transportation