

MTA All-Electric Bus Program

December 2019

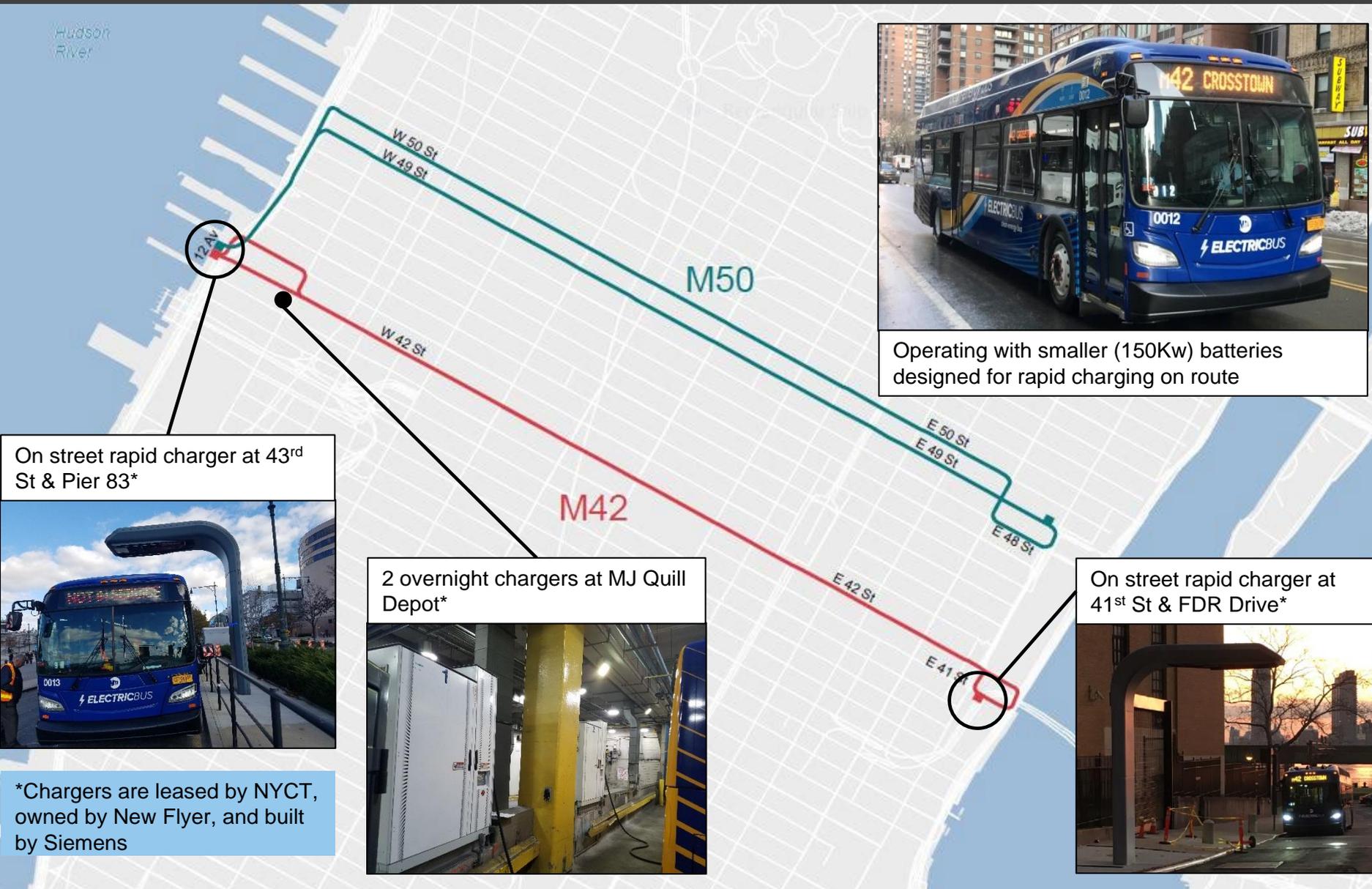
Overview

10 bus pilot started January 2018

- 3-year lease (2018-2020) from 2 manufacturers of 5 buses each: New Flyer and Proterra
- 3 rapid on street chargers and 8 slow chargers at 2 depots (subcontracted through the bus manufacturers)
- 88,000 miles operated, avoiding 24,242 gallons of diesel and 215 tons of carbon emissions
- Experience to date has yielded several important lessons:
 - High energy use in extreme weather
 - Reliability
 - Complicated charger construction in our operating environment

Pilot: 5 New Flyer buses are operating in Manhattan

Hudson River



Operating with smaller (150Kw) batteries designed for rapid charging on route

On street rapid charger at 43rd St & Pier 83*



2 overnight chargers at MJ Quill Depot*



On street rapid charger at 41st St & FDR Drive*



*Chargers are leased by NYCT, owned by New Flyer, and built by Siemens

Pilot: 5 Proterra buses are operating in Brooklyn



Operating with larger(440Kw) batteries designed for overnight charging

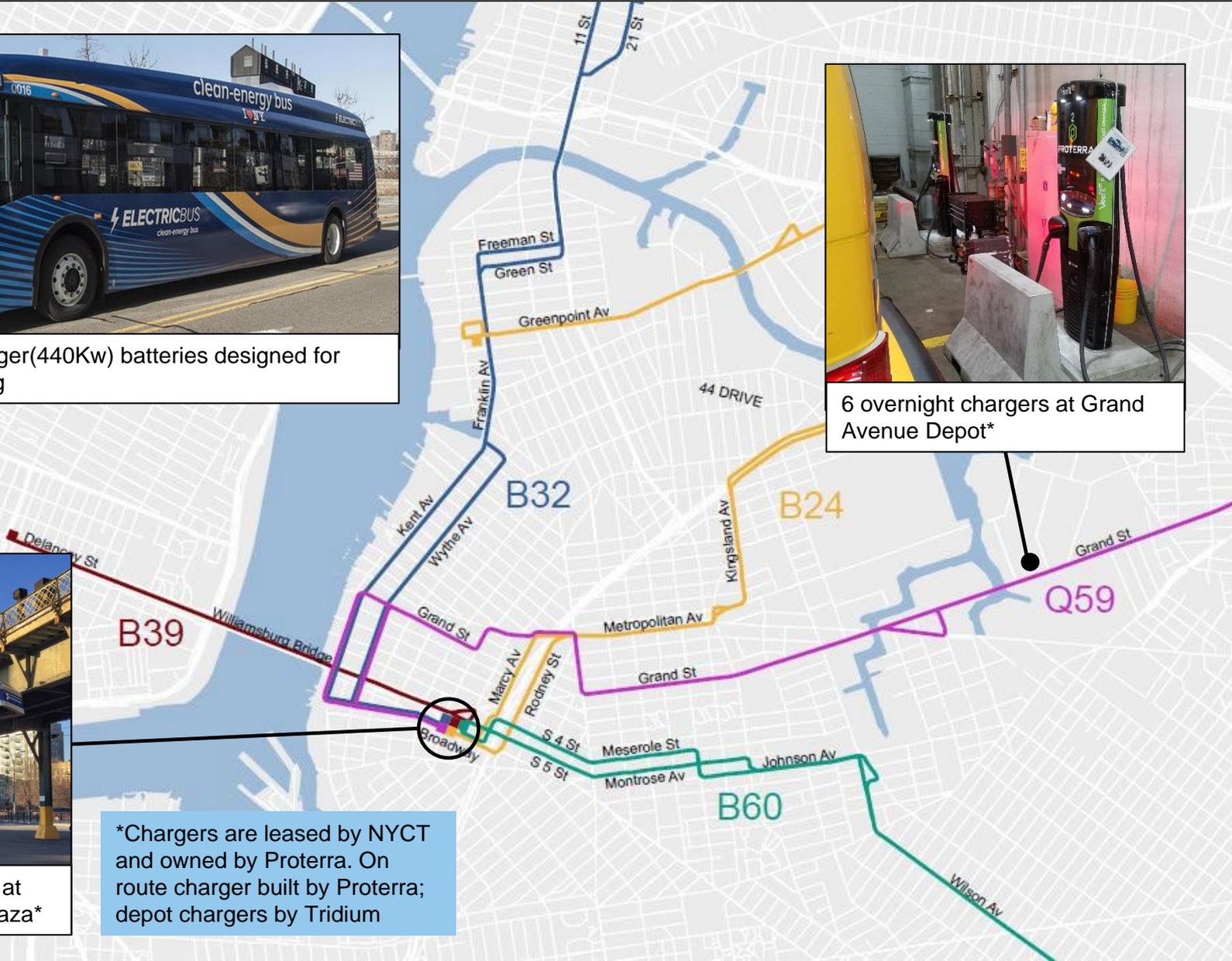


6 overnight chargers at Grand Avenue Depot*



On route rapid charger at Williamsburg Bridge Plaza*

*Chargers are leased by NYCT and owned by Proterra. On route charger built by Proterra; depot chargers by Tridium



Aspiration & Challenges Going Forward

All-Electric Fleet Transition

- Aspire to achieving a fully zero emissions fleet by 2040
 - 15 articulated all-electric bus contract awarded; deliveries starting Q4 2019
 - 45 standard all-electric bus procurement award projected March 2020
 - Up to 500 all-electric buses included in **proposed** 2020-2024 Capital Program
- **Multiple challenges must be addressed as part of the transition:**
 - **Up front purchase cost**
 - **Qualified bus manufacturers**
 - **Electricity supply**
 - **Scalability of charging infrastructure**
 - **Resiliency during power outages**
- There are multiple incentives that exist for private electric car owners and developers who install publicly-available electric chargers
 - Con Edison SmartCharge program advantages private care owners
 - Perception that transit agencies don't need incentives to do "the right thing"

Problem Statement

There is limited amount of funds available to provide incentives for clean transportation.

For Mobility & Transportation to enable New York's decarbonization goals, we must first determine what part of public funds should be used to incentivize private car owners and what part should be used to incentivize electrification of transit.