

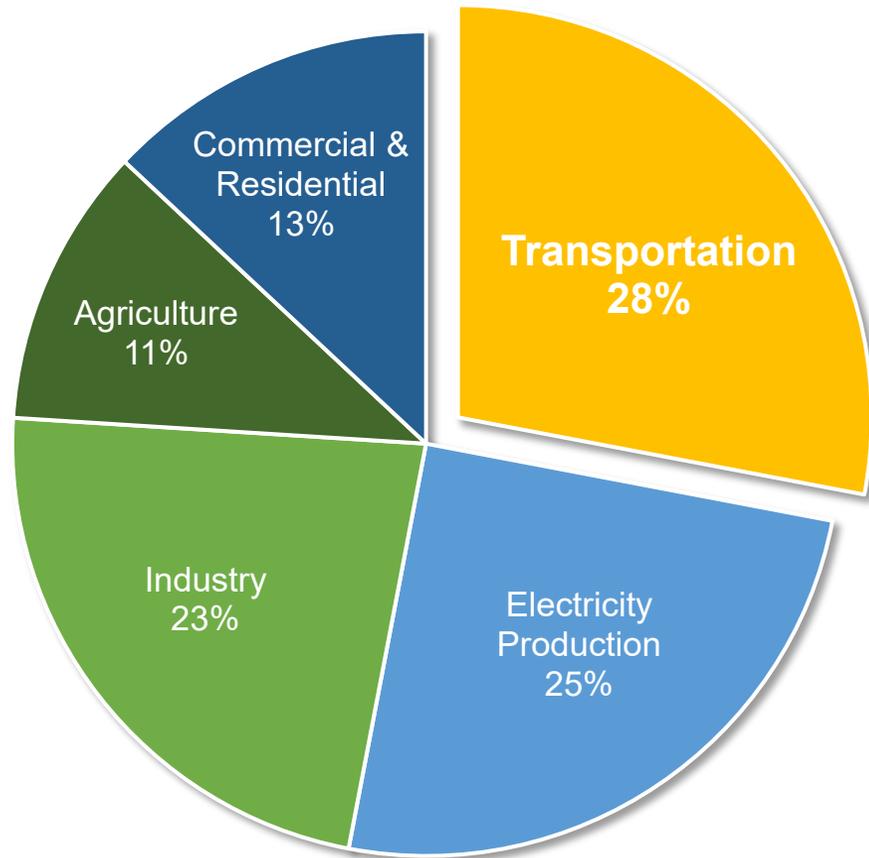


Climate Sustainability Framework

April 26, 2023

Transportation is the most significant emissions source in the US

U.S. GHG Emissions by Sector, 2021

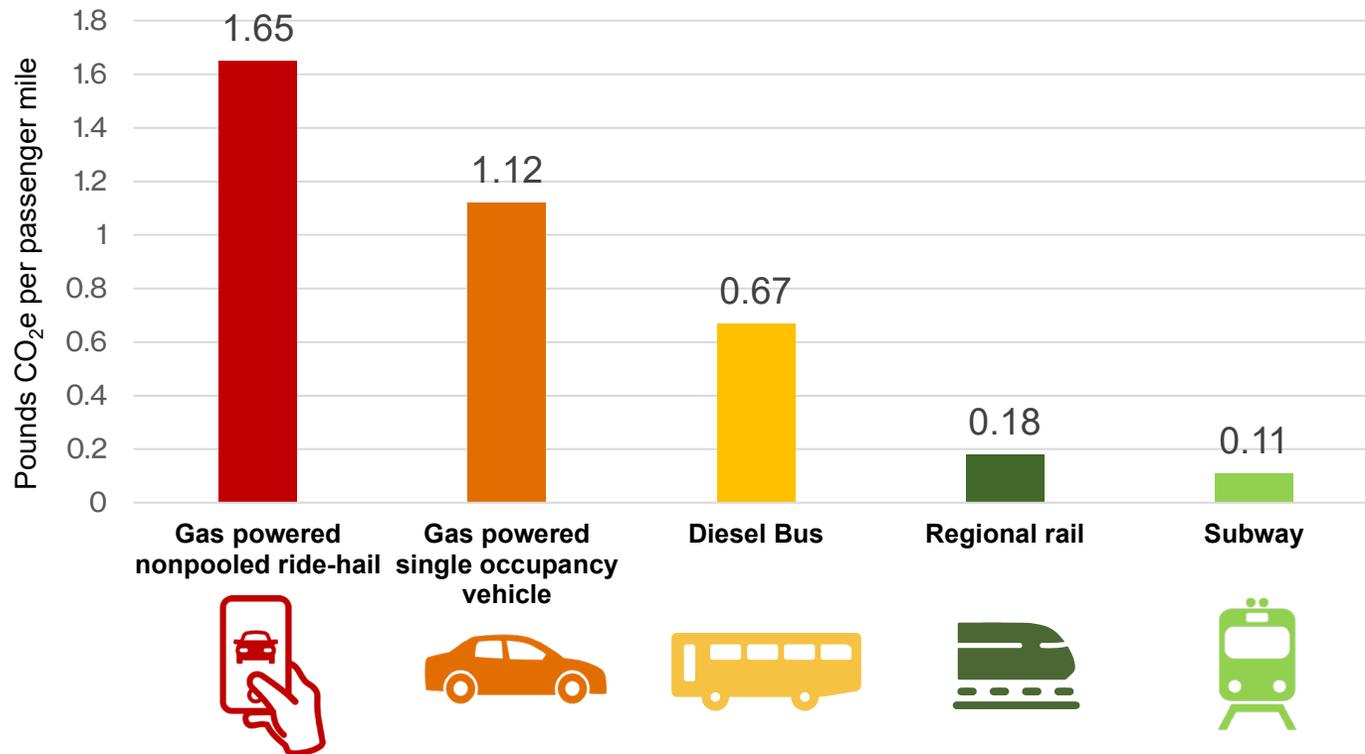


The transportation sector accounts for **more than a quarter** of national greenhouse gas emissions

Source: US EPA www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions

Transit produces significantly lower greenhouse gas emissions per passenger mile

Estimated CO₂ emissions by mode, 2020



The typical subway commute is **over 10 times greener** than the same commute by car and **15 times greener** than in a rideshare.

Sources: National Transit Database (NTD)

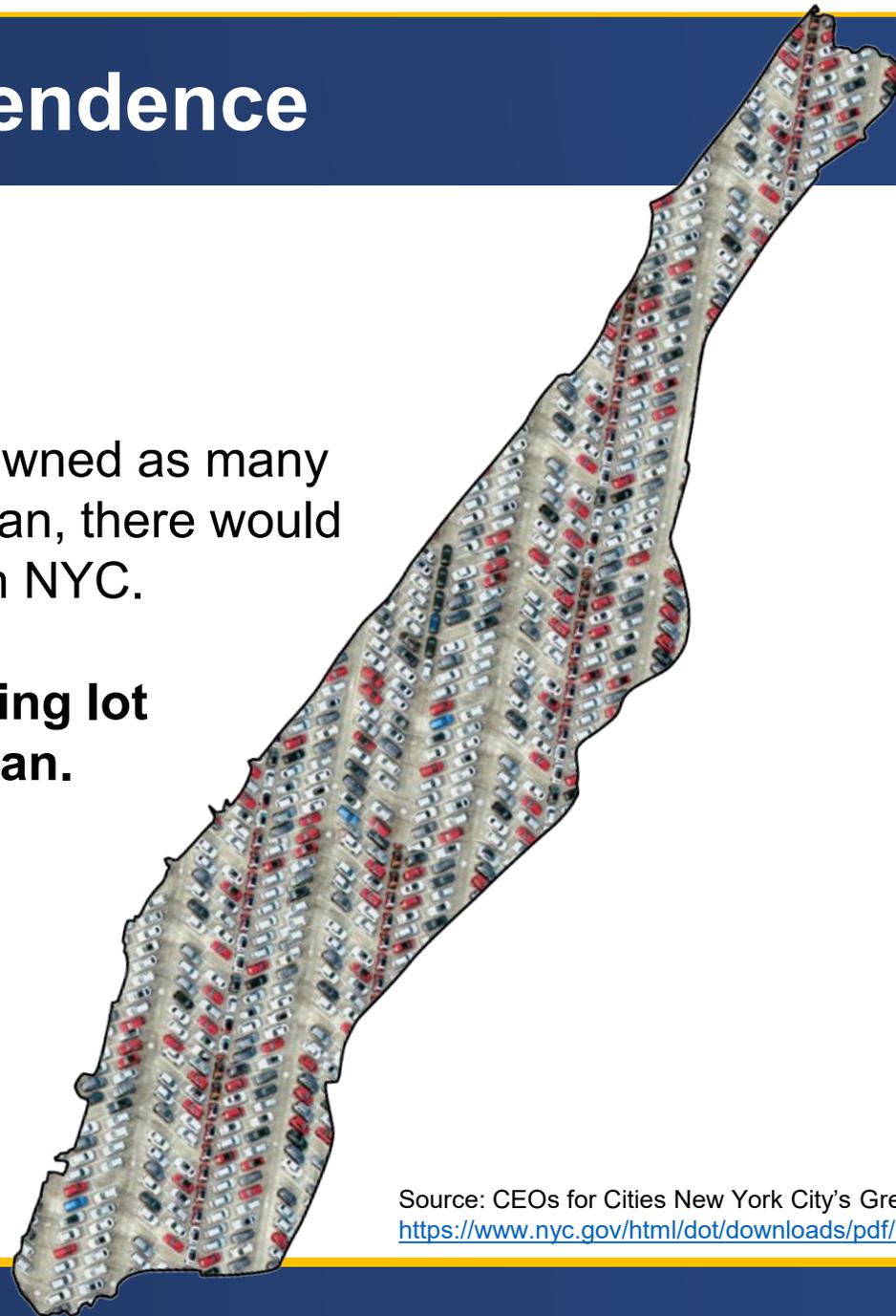
An Update on Public Transportation's Impacts on Greenhouse Gas Emissions <https://www.trb.org/Main/Blurbs/181941.aspx>

Ride Hailing's Climate Risks: <https://www.ucsusa.org/resources/ride-hailing-climate-risks>

Transit reduces car dependence

If New York City residents owned as many cars as the average American, there would be **4.5 million more cars** in NYC.

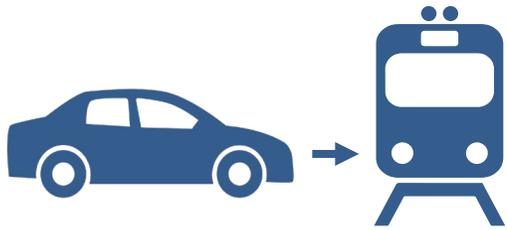
This would require a parking lot the same area as Manhattan.



Source: CEOs for Cities New York City's Green Dividend 2010
https://www.nyc.gov/html/dot/downloads/pdf/nyc_green dividend_april2010.pdf

MTA provides sustainable mobility to millions of New Yorkers

Transit reduces transportation-related carbon emissions in four ways:



Mode shift effect

Shifting from cars to sustainable transportation modes



Upstream effect

Eliminating emissions from gasoline production and transportation



Congestion effect

Improving the operation of the roadway network by reducing congestion



Land use effect

Enabling denser land uses that promote shorter trips, walking and cycling, and reduced car ownership

Source: APTA 2018 Quantifying Greenhouse Gas Emissions from Transit https://www.apta.com/wp-content/uploads/Standards_Documents/APTA-SUDS-CC-RP-001-09_Rev-1.pdf

MTA transit avoids more than *20 million* metric tons of carbon emissions annually



...roughly the amount of carbon absorbed by a **forest equivalent to the size of Indiana**

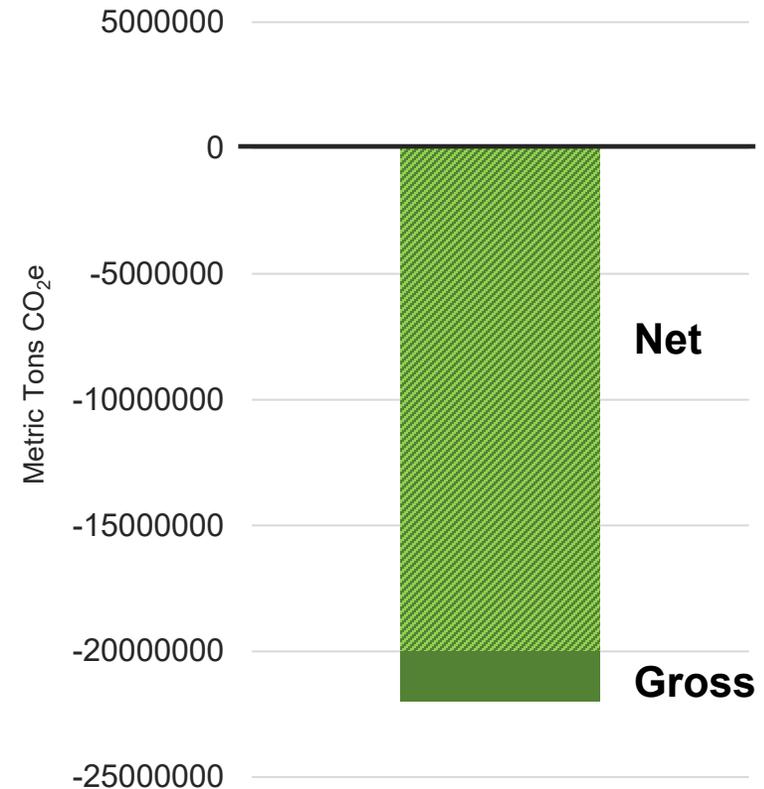


...about the same emissions from **51 BILLION miles** driven by a typical car



...the emissions from generating electricity used in **3.9 MILLION homes** in a year

MTA Annual Avoided GHG Emissions



More than 20MMT annual avoided carbon emissions is a net estimate derived from subtracting the MTA's operational emissions from estimated gross MTA annual avoided carbon emissions. Comparisons generated from EPA Greenhouse Gas Equivalencies Calculator: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

The MTA is already part of the climate solution

And MTA systems can become *even more* sustainable!



Cutting emissions is a priority, but not at the cost of ridership

Robust MTA service is key to the region's sustainable future

If we consider the MTA's emissions in isolation, we risk losing the bigger picture:

- Transit riders are part of the climate solution.
- Riders should not bear the cost of emissions reductions.
- Reducing service might reduce the MTA emissions, but it would increase the region's emissions.



MTA Climate Sustainability Framework

MTA CONTRIBUTIONS TO **REGIONAL/STATE** **GHG** REDUCTIONS



Grow Ridership

Retain existing customers
and attract new ones

MTA Climate Sustainability Framework

MTA CONTRIBUTIONS TO REGIONAL/STATE GHG REDUCTIONS

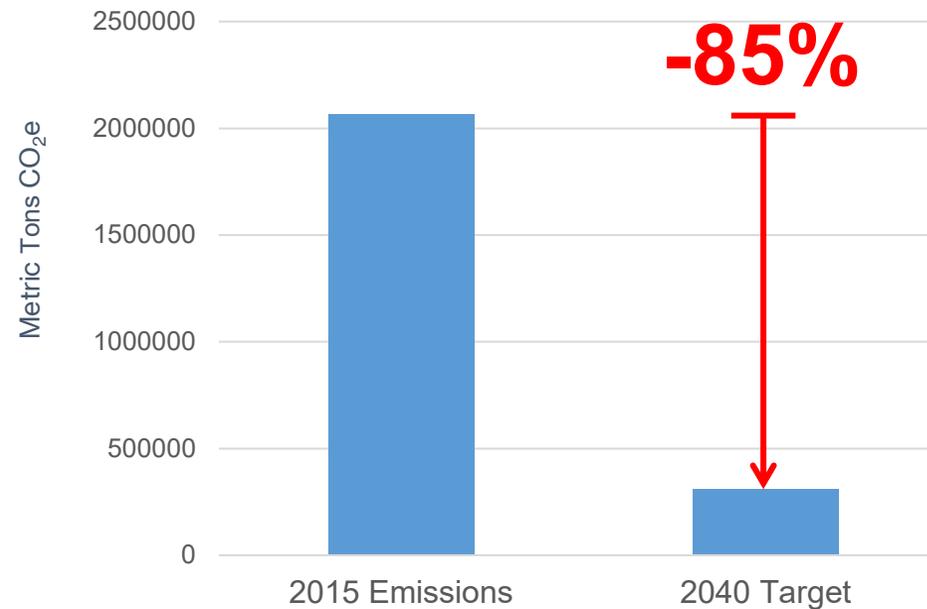


Grow Ridership

Retain existing customers
and attract new ones

MTA GHG EMISSIONS

Reduce emissions 85% by 2040 from a 2015 baseline



MTA Climate Sustainability Framework

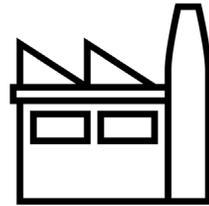
MTA CONTRIBUTIONS TO REGIONAL/STATE GHG REDUCTIONS



Grow Ridership

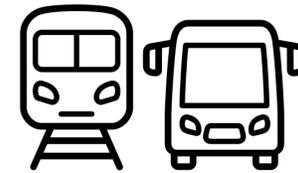
Retain existing customers and attract new ones

MTA GHG EMISSIONS



1. Update Facilities

Reduce fossil fuels and energy consumption in stations and supporting facilities



2. Transition Fleets

Reduce fossil fuels in buses, trains and non-revenue fleets

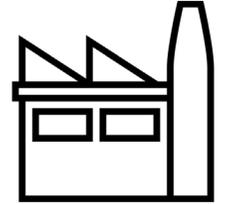


3. Use Energy Efficiently

Optimize energy use through management and storage

1. Update Facilities

- MTA facilities, including train yards, maintenance shops, bus depots, and rail stations, encompass 16 million square feet with **tens of thousands of assets** that support MTA services.
- Many assets require repairs or replacements. The MTA will consider **emissions reductions, energy efficiency, and cost savings** in capital plans.



Radiant Heating
(Brewster Yard)
COMPLETE



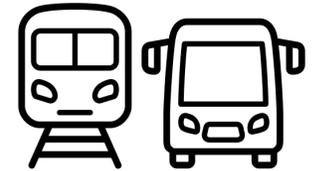
LED Lighting
(Multiple Bridges & Tunnels)
COMPLETE



Solar Photovoltaics
(Harmon Yard)
IN PROGRESS

2. Transition Fleets

- Extensive revenue and non-revenue fleets keep the MTA system running
- MTA road and rail fleets will **transition to zero or near-zero emissions propulsion technologies**



Light duty non-revenue fleet
decarbonization
(All agencies)
IN PROGRESS



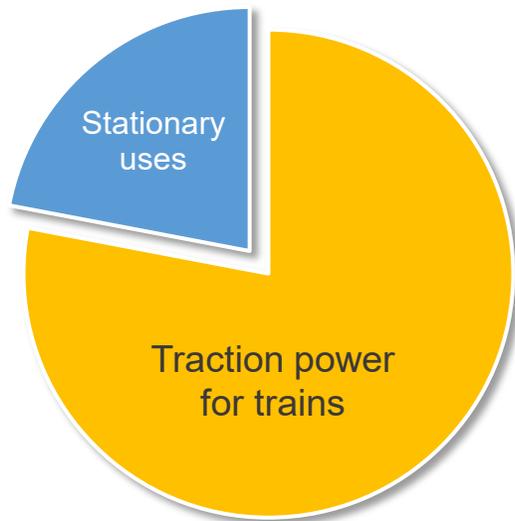
Zero-Emissions
Bus Transition
(NYCT)
IN PROGRESS



Upgrade of diesel work locomotives with
hybrid and clean diesel engines
(NYCT)
IN PROGRESS

3. Use Energy Efficiently

- Like all rail-based transit systems, the **MTA is an energy-intensive operation**
- New York State's **transition to 100% zero emission electricity supports MTA's emission target**
- The MTA will focus on **conserving electricity and improving energy management** to reduce demand on the grid and cut costs



Traction power accounts for about 75% of MTA electricity consumption



“Smart Battery” energy management system (NYCT Subway)
UNDER EVALUATION



Third Rail Heater Remote Controls (NYCT Subway)
IN PROGRESS

2023 MTA Climate Action Milestones

- 1. Climate Sustainability Framework - Earth Day 2023**
- 2. Twenty Year Needs Assessment - October 2023**
Including Climate Sustainability and Resilience
- 3. Climate Action Plan - Winter 2023/2024**
- 4. MTA Clean Construction Program - 2023**