

ELECTRIFY
THE MBTA
COMMUTER RAIL

Discover the
Regional Rail Vision
& why you should care



TRANSITMATTERS

What's Up With The MBTA Commuter Rail?

Boston draws hundreds of thousands of commuters daily as a regional hub. These commutes between the city and its greater suburbs account for $\frac{3}{4}$ of Boston's transportation emissions.[1]

In response to alarming data about the progress of climate change, the Commonwealth of Mass. committed to a goal of net-zero emissions by 2050.

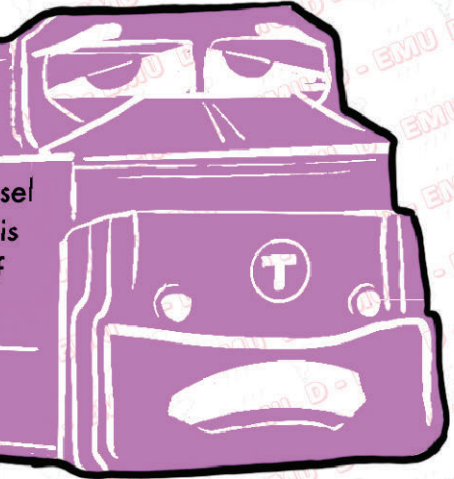


Regional Rail is TransitMatters' vision for electrifying MBTA commuter rail lines to help meet environmental goals and the city of Boston's transit development goals on schedule.



Diesel Trains

The MBTA uses locomotives that run on diesel fuel to haul their commuter rail coaches. This is a train made of one engine and a fleet of unpowered passenger cars.

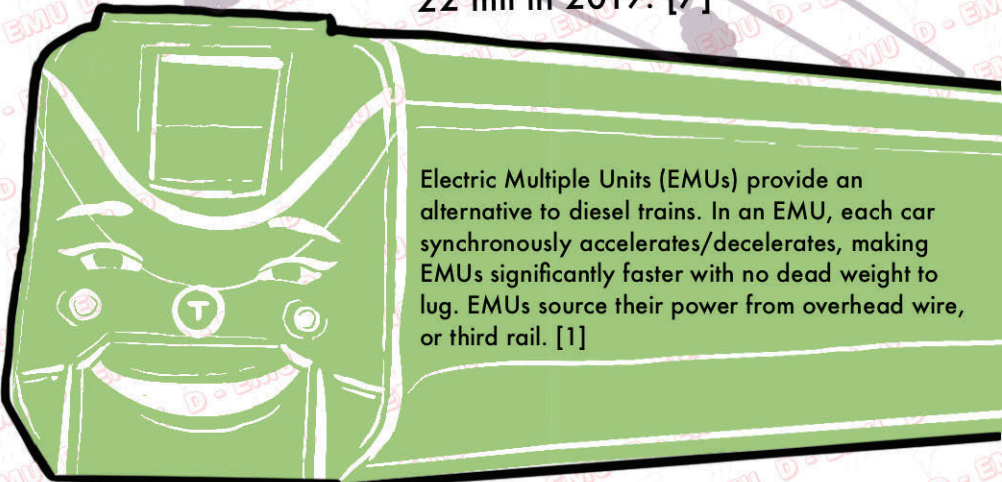


In Switzerland, railroads are 100% electrified. And thanks to hydropower, passengers reduce their energy consumption by 75% and CO2 emissions by 95%. [6]

Versus...

The automobile-dominated city of Auckland opened electric service in 2014-15, which increased frequency and growth in ridership from 10 mil per year in 2010-13 to 22 mil in 2019. [7]

EMUs



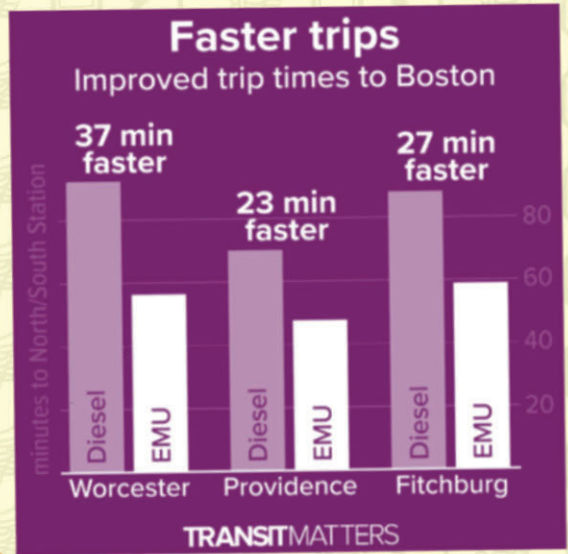
Electric Multiple Units (EMUs) provide an alternative to diesel trains. In an EMU, each car synchronously accelerates/decelerates, making EMUs significantly faster with no dead weight to lug. EMUs source their power from overhead wire, or third rail. [1]

Unreliable Trains? EMUs Got Your Back

The biggest gripe riders have with public transit is reliability [3,4]. Nearly every barrier to transit usability intersects with the issue, whether that be concerns over bodily safety, accessibility[5], or station conditions.

“The main metric used to measure reliability in the rail industry is called Mean Distance Between Failures (MDBF). Even the newer MBTA diesels (circa 2014) only manage about 25k miles.” [2]

**RELIABILITY
IS RIDABILITY.**



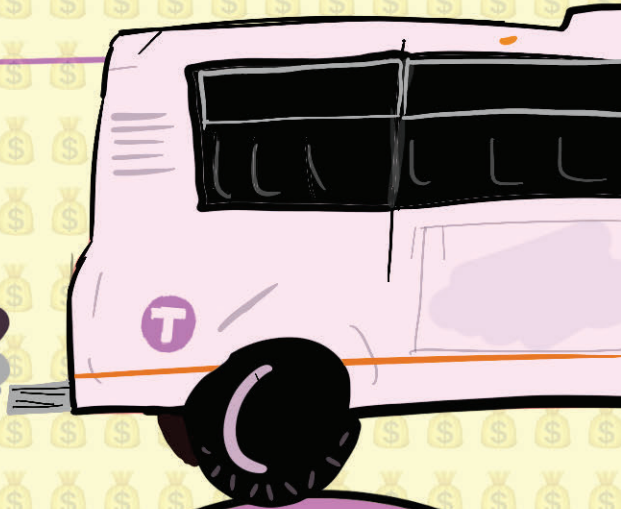
“New EMUs outperform these locomotives by a factor of 5 to 20, with an MDBF deep into the 6 figures; the range is about 150k or 450k miles.” [2]



So You Want To Talk About Fares?

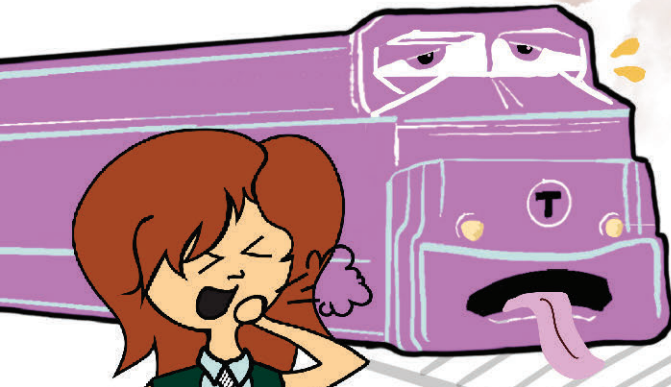
TransitMatters' Regional Rail Vision is incomplete without free transfers to subway, bus, and other regional rail services; regardless of where your stop is in Massachusetts. Passengers should be able to get on a bus in an outlying city like Worcester or Lowell, take it to the train station, ride a train to Boston or another city, and connect to their final destination by bus or subway, on one fare. [8]

The estimated cost of system electrification is \$3-5 Billion. [2]



Bus → Train → Bike

Choking On Smog?



“Nearly all US locomotives are propelled by diesel-electric drives, which emit 35 million [tons] of CO₂ and produce air pollution. [This causes] about 1,000 premature deaths annually, accounting for approximately US\$6.5 billion in annual health damage costs.” [9]

American electricity sources aren't always renewable, although it is still true that American EMUs produce lower emissions than their diesel counterparts. The fossil fuel industry, NIMBYs and skeptics present barriers to switching our grids to renewable electricity[10]. However, the pressure of introducing more large-scale electric powered infrastructure can help us move more rapidly and intentionally towards greening our sources of electricity.



Deafened By Diesel?



Some MBTA Commuter tracks pass through high pollution Boston neighborhoods like Roxbury and Dorchester. In particular, the Fairmount Line's many urban stations cause increased acceleration/deceleration, emitting more local pollution. Electrifying the MBTA systems is thus a key environmental protection and justice, and health priority. [2]



Diesel



Electric



EMUs and You

Electrification is economically and environmentally responsible, makes the rail system faster, more reliable, and is feasible within the MBTA's established timelines. What we need is for the regional rail vision to garner enough support and attention that electrification can become a priority for the Commonwealth of Massachusetts in order to electrify tracks and buy EMUs.



Scan here for next steps!

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*References can be found by scanning the above QR code

