

Mass Transit: Live Vehicle Positions from Open Agency Feeds

Melbourne Gregory

Orbital Network

Version 1.0 — October 13, 2026

Abstract

This document describes Mass Transit, a public-transport layer for Orbital Network, and sets out its use cases. The layer plots live vehicle positions published openly by a transit agency — today, the Massachusetts Bay Transportation Authority (MBTA), whose public API streams the positions of Boston-area buses, trains, and ferries without a key. Each marker is a vehicle the agency is reporting right now, carrying its route, its status, its direction, and its speed where the feed provides them. Consistent with the network's data-provenance rules, every card names the publishing agency, and the many transit feeds that require a free developer key — most GTFS Realtime feeds worldwide, WMATA included — are named in the layer's status line rather than simulated. The layer is live as of October 2026.

What the layer shows

MBTA vehicle positions. When the layer is switched on, the page reads the MBTA's public vehicles API and plots up to 170 vehicles at the latitude and longitude the agency reports for each. A marker's title names the route — the Red Line, a numbered bus route — and its card shows what the feed says about that vehicle: its current status (for example, stopped at a station or in transit), its direction, and its speed converted to miles per hour where the agency reports one. The source line reads "MBTA live vehicle positions · GTFS-family agency feed." The positions are the agency's own reports, drawn as they arrive; the page adds nothing to them.

What is deliberately absent. Most of the world's realtime transit data flows through GTFS Realtime feeds that require a free developer key issued to an individual — WMATA's included. A static web page cannot hold such a key for a visitor, so those systems are not plotted; the status line names them as "free developer key needed, not plotted." Nothing about their absence is filled in with estimates or schedules dressed as live positions.

Provenance rules. Every marker is bound to the agency feed behind it, named on

the card. If the feed cannot be reached, the layer reports that and plots nothing — a vehicle never appears where the agency did not just say it is.

Use cases

Boston-area riders. A system-level picture — where the fleet actually is this minute — that complements a stop-level arrival app: bunching, gaps, and a stalled line read at a glance.

Families. A parent can show a child "your train, right now, on the planet" — a real vehicle, on a real route, reported by the agency itself. It turns an abstract network into something a kid can watch move.

Transit advocates and planners (awareness). A public window onto operations as published: how much of the fleet is out, where it clusters. The layer is a view, not an operations console, and presents the feed as the agency publishes it, errors and all.

Journalists. During a disruption, the difference between "the agency says service is suspended" and "here is where its vehicles actually are" is visible and citable to the agency's own feed.

Educators. A working example of GTFS-family open data — the standard feeds agencies publish — and of why some systems can appear on a page like this keylessly while others, by their key terms, cannot.

Coverage and limitations

Coverage today is the MBTA service area — greater Boston — because the MBTA is the agency whose realtime positions the page can read openly without a credential. The layer claims no other city. Positions refresh when the layer is re-tapped (a fresh read is used for four minutes), so the picture is as current as the last tap, not a continuous dispatch display; speeds and statuses appear only where the agency's feed reports them, and a vehicle whose transponder is silent simply has no marker. For catching an actual train, the agency's own arrival predictions remain the right tool — this layer shows the fleet, not countdowns.

Disclosure

Manuscript prepared with AI drafting assistance; all content was reviewed and approved by the author, who takes full responsibility for it.

The Orbital Network system described in this document operates at <https://godsky.net>. The white paper "Orbital Network: A Live Broadcast System for

Real-Time Planetary Awareness" (Zenodo, DOI 10.5281/zenodo.23328433) describes the parent system.