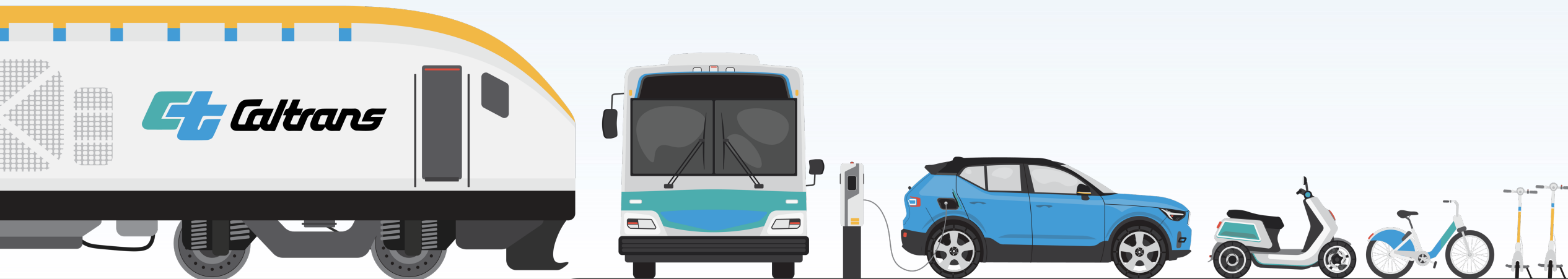




Caltrans Integrated Mobility

Connecting the dots on transportation innovation across California, the U.S., and the world.

February 18th 2025



An Introduction to GTFS

The data standard for transit service



Where is my bus?

It's a question that is often harder to answer than it should be.

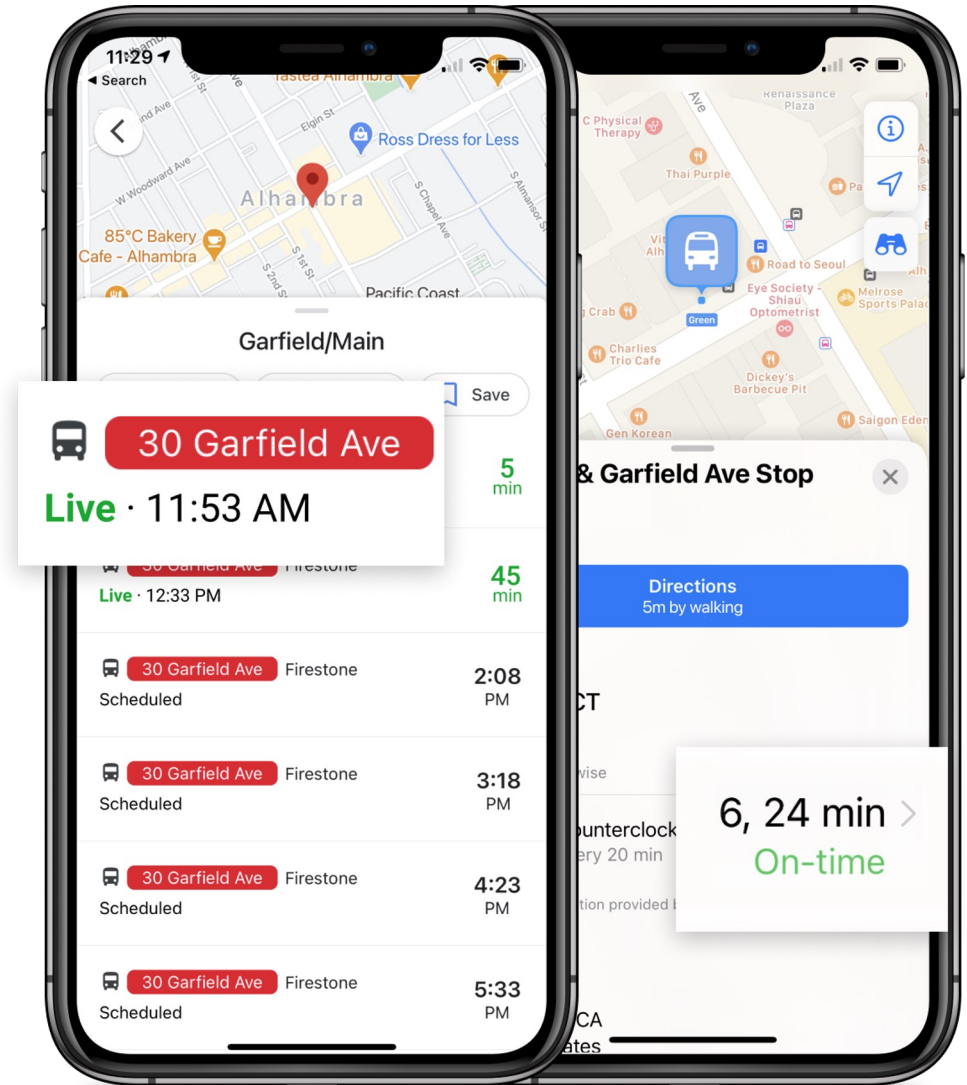
Real-time data is how both riders and operators answer this question. **GTFS**, a standard for how this data is communicated, allows you to see your vehicle – in real time – on a map.

So, what exactly is **GTFS**?

Real-time transit data comes in many forms, but only one – the **General Transit Feed Specification (GTFS)** – provides a universal template that is interoperable regardless of who produced it or who wants to use it.

That means that no matter who your GTFS vendor is, common third-party journey apps like Apple Maps, Google Maps, and Transit App can use it.

With GTFS, you can meet your riders where they are – no need to download a special app, they will be able to easily see transit options in apps they already use.



GTFS comes in two forms...

There are two main components: **Schedule** and **Realtime**.

GTFS Schedule ("Static")

- *Static information.*
- *Describes the schedule of a transit agency, including routes, days/hours of operation, etc.*
- *Establishes the baseline transit information.*
- *This is the "plan" of what transit service looks like.*

GTFS Realtime (GTFS-RT)

- *Dynamic information.*
- *Describes the location of vehicles in real-time using location data.*
- *Adjusts transit information based on real-time updates.*
- *This is what "actually" is happening with the transit service.*

These two component, GTFS Schedule & GTFS Realtime, depend on each other.

GTFS Schedule ("Static")

GTFS Schedule is the backbone of transit data. It provides comprehensive information in a standardized format for:

- Routes
- Day / time schedules
- Stops

GTFS Realtime (GTFS-RT)

GTFS Realtime needs GTFS Schedule for baseline operations assumptions. It enhances this data by adding in real-time data on:

- Vehicle location
- Alerts (like detours, holiday closures, etc.)
- Updates

Because GTFS is standardized, you can easily integrate your data with third party applications like google or apple maps, and build on top of it with other vendors.

The power of GTFS Realtime is that it enhances the rider experience & agencies' operational efficiency.



For transit riders, knowing when a bus or train will actually arrive:

- reduces uncertainty
- increases the attractiveness of transit
- improves rider satisfaction



For operators, GTFS Realtime brings

- operational insights
- supports the ability to dispatch vehicles in emergencies

By the numbers...

In **Seattle**, riders perceived wait times to be **30% shorter** when they had access to GTFS Realtime data.

In **NYC & Chicago**, bus ridership **increased by 2%** after transit agencies published real-time arrival information.

How can agencies get GTFS?

GTFS Schedule ("Static")



Remix

- Remix is a comprehensive transportation planning and scheduling software tool. If your agency has received 5311 funding in the last three years, you may be eligible for a free Remix license from CalSTA and Caltrans.



- Scan the QR code or check out the [application form](#) if interested.

GTFS Realtime (GTFS-RT)



State MSAs

- California DGS competitively awarded contracts ("MSA") to vendors offering standardized GTFS-Realtime products.
- The MSAs allow you to bring your own hardware or purchase directly from the vendor.

Want to learn more about these options and how you can access them? Reach out to hello@calitp.org.

The California Transit Data Guidelines help ensure transit data meets riders' expectations.

The guidelines address several key features:

- ✓ Publication of GTFS Schedule and Realtime data, including service alerts and accessibility info
- ✓ Availability of GTFS feeds on open-source feed aggregators, with an open data license
- ✓ Real-time data feeds (APIs) with an uptime greater than 99%
- ✓ Designation of a single point of contact at each transit agency
- ✓ A documented process for improving data quality and supporting processes and technology

You can learn more from the [website](#), this [factsheet](#), or by reaching out to hello@calitp.org.

CIM is also here to help monitor GTFS data quality and support agencies' service.

- ✓ Caltrans' Data Quality Team can help ensure that your data is high quality and able to get you the best results possible.
- ✓ We can help you monitor your GTFS Schedule and GTFS-Realtime feeds for errors and provide guidance on how to resolve these.
- ✓ We also provide monthly data quality reports with key metrics to help you understanding how your data is working for you.

Want to learn more about data quality? Visit <https://reports.calitp.org/> or email hello@calitp.org to request a GTFS Data Assessment.



Agencies that want to learn more about GTFS or data for transit should consult the following:

GTFS Schedule



Check your eligibility and apply for a free **Remix license** [here](#). Reach out to hello@calitp.org for technical assistance and to learn more.

GTFS Realtime



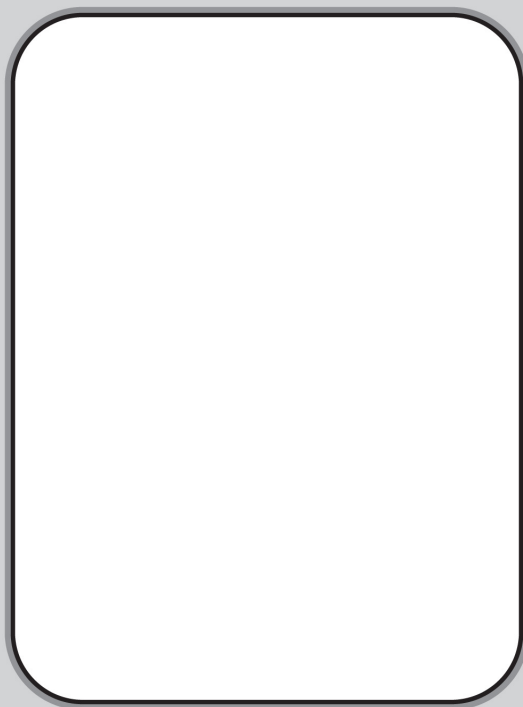
Reach out to hello@calitp.org to learn more and get started with the **MSA contracts**.

Data Quality



Visit <https://reports.calitp.org/> or Email hello@calitp.org to request a GTFS Data Assessment.

EXIT



Questions, feedback, or have a topic you would like to know more about? Please reach out to Lauren.Gilbert@rebelgroup.com

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