How To

Report GTFS Data To The US National Transit Database

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Background

The 2021 US Bipartisan Infrastructure Law amended 49 U.S.C. 5335(a) to require the Federal Transportation Administration (FTA) to collect "geographic service area coverage" data for public transit. The FTA is implementing this mandate by collecting General Transit Feed Specification (GTFS) data through the National Transit Database (NTD) beginning in Fiscal Year 2023/24.

GTFS data will provide planners, researchers and policy-makers with more granular data on transit services in the US, helping transit to rebuild after the Covid-19 pandemic and prepare for unknown future crises. NTD reporters have an easier path to compliance because of the choice of a widely used industry standard, GTFS.

This guide from Optibus provides guidance to transit agencies reporting GTFS data to the NTD.

Key terms and dates

October 31, 2023
NTD report due date for a 2023/24 fiscal year ending in June.

NTD
National Transit Database, the repository of service, ridership, financial, and asset data for public transit in the United States.

GTFS
General Transit Feed Specification, an industry-standard data format for passenger information and service information, which includes stops, routes, schedules, calendars and fares.
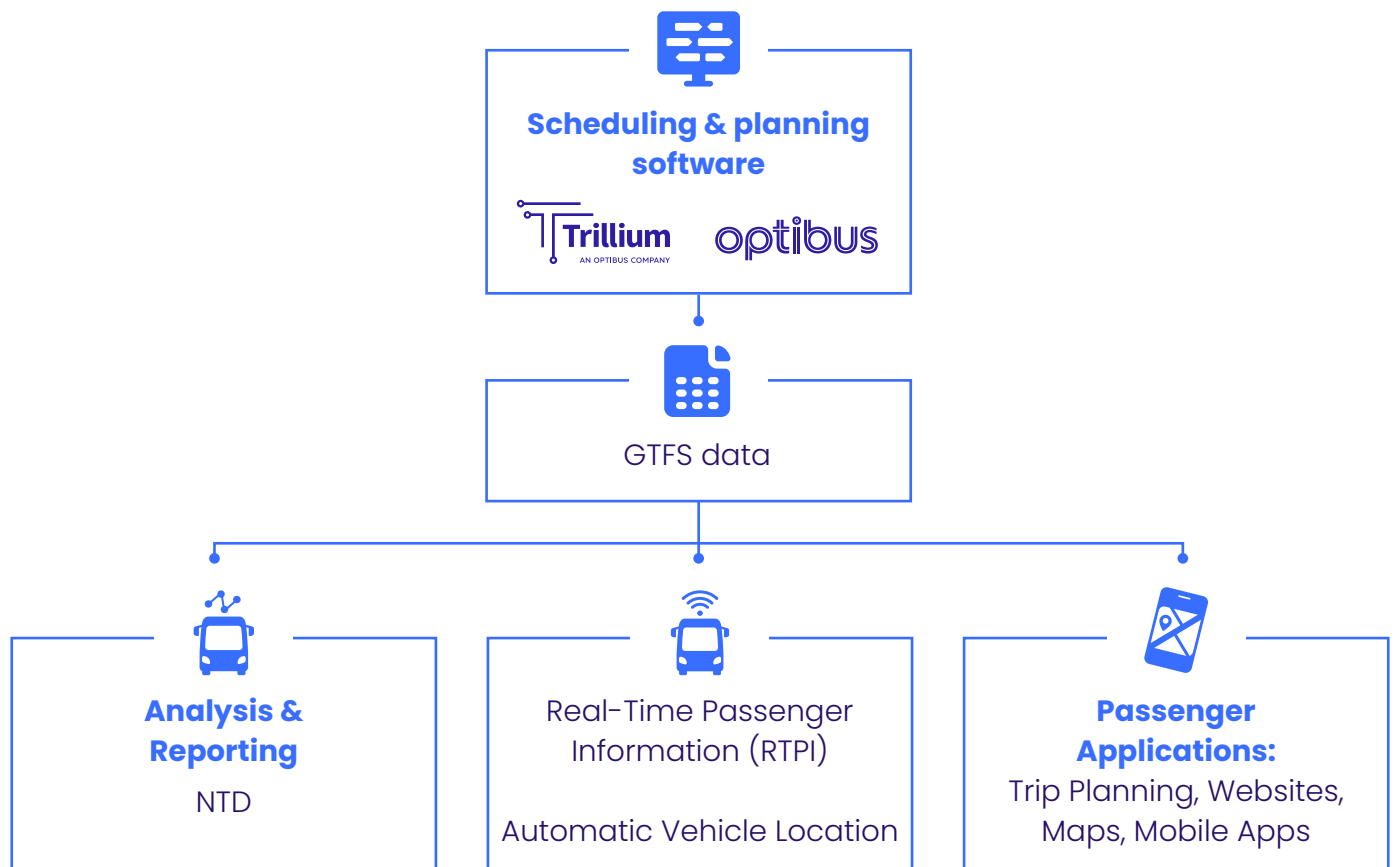
What is GTFS data?

The **General Transit Feed Specification (GTFS)** is an industry standard for sharing transit data. It enables interoperability between software and systems in public transport. Hundreds of transit systems in the United States and thousands of systems in the world publish GTFS data. This format enables the same data to be used by hundreds of applications, including popular mobile apps such as Google Maps, Apple Maps, and Transit. Development of this industry standard is facilitated by the non-profit MobilityData.

GTFS encompasses two related types of data:
- **GTFS Schedule data** includes routes, stops, schedules, calendars, fares, station pathways, and other information that is known in advance of transit operation.
- **GTFS Realtime data** includes service changes, vehicle positions, advisories, and arrival estimates (ETAs), published during transit operations.

GTFS Schedule data is consumed by real-time systems, planning and analysis tools and repositories (including the NTD), and passenger applications like Google Maps.

Scheduling & planning software

Trillium
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optibus

GTFS data

Analysis & Reporting

NTD

Real-Time Passenger Information (RTPI)

Automatic Vehicle Location

Passenger Applications:
Trip Planning, Websites, Maps, Mobile Apps

Four steps to compliance

1 | Check for readiness

Are you ready to report GTFS data to the NTD? Here are a few easy checks.

Does your transit system have GTFS data?
- ☐ See example GTFS URL for Marin Transit. A quick way to check is to do a Google search for <your agency name> + GTFS.
- ☐ When was the last time the GTFS dataset was updated? Make sure it represents the schedule currently in operation. If it's publicly available, you can use a data directory (see example list of changes in transit.land for Marin Transit).

Ask around:
- ☐ If you work at a large transit system, GTFS data may be prepared by a different team.
- ☐ At a small transit system, data may be prepared by a regional planning agency or department of transportation.

2 | Create GTFS data

Approximately 35% of all transit systems in the US maintain and publish GTFS data. If your agency is one of the 65% of agencies that does not publish this data, choose from one of the methods below.

Option 1
Data export from scheduling or real-time systems

GTFS data can be exported from many scheduling or AVL (automatic vehicle location) systems.

Questions to ask a current or prospective vendor:
- Does your solution export GTFS data? Is there an extra cost for this feature?
- What guarantees do you offer with respect to data quality? Does the data pass the checks in MobilityData's validator (https://gtfs-validator.mobilitydata.org/)?
- For what clients and consuming applications (including the NTD) has GTFS data from your solution been used successfully?

The Optibus Planning and Scheduling products export GTFS data, among other industry standard formats.

The Optibus Planning product provides a visual interface to enter and edit stop, route, and timetable information and export GTFS data.

The Optibus Scheduling and Rostering products build on the geographic and timetable data to efficiently assign vehicles and crews.
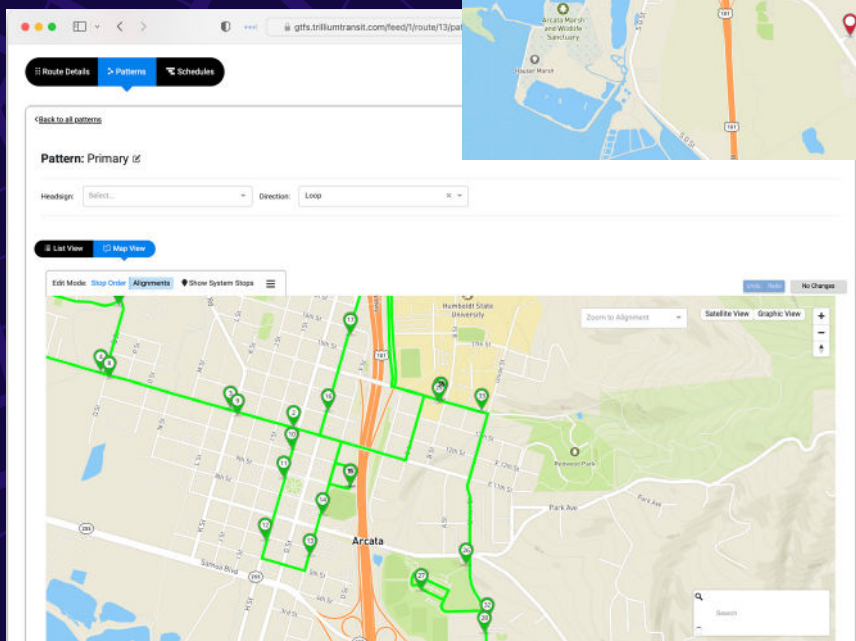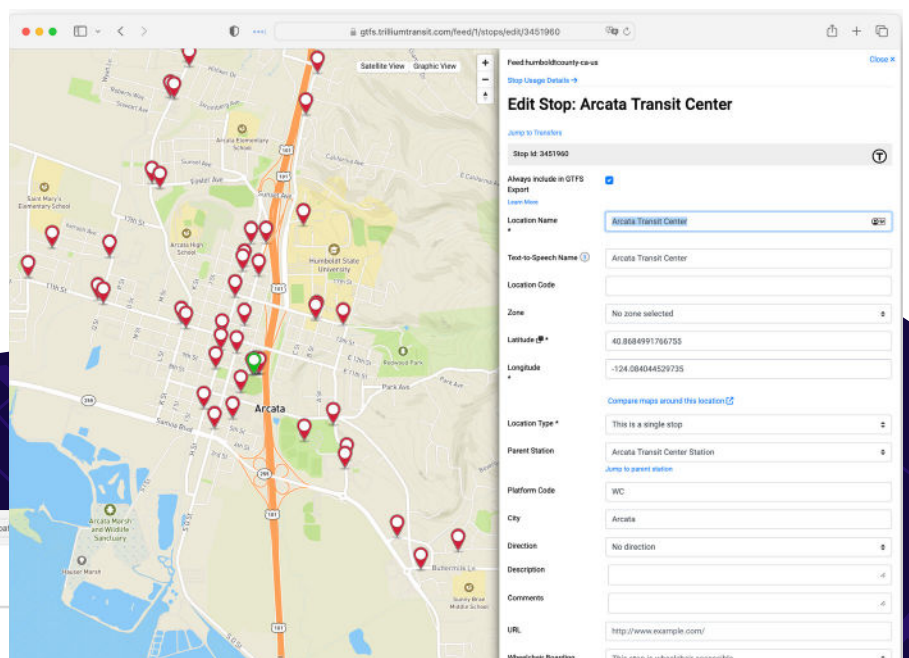
Option 2
Use a GTFS editing tool

Web-based software provides an interface to enter schedule and geographic data, and validate and keep GTFS up-to-date. This option offers a cost-effective balance between labor-intensive spreadsheets and feature-rich scheduling or CAD/AVL software.

Questions to ask a current or prospective vendor:
- What support is available to edit and improve GTFS data?
- What guarantees do you offer with respect to data quality? Does the data pass the checks in MobilityData's validator (https://gtfs-validator.mobilitydata.org/)?
- For what clients and consuming applications (including the NTD) has GTFS data from your solution been used successfully?

Optibus's GTFS Manager by Trillium is the first web-based GTFS editing product, used to maintain data for nearly 400 agencies. GTFS Manager provides a convenient user interface to create, edit and visualize GTFS data.

Option 3
Consultant-assisted data creation

Engage the expertise of consultants who specialize in GTFS data creation.

Questions to ask a current or prospective consultant:
- What source data files are required or preferred to create GTFS data?
- What guarantees do you offer with respect to data quality? Does the data pass the checks in MobilityData's validator (https://gtfs-validator.mobilitydata.org/)?
- For what clients and consuming applications (including the NTD) has GTFS data been successfully delivered?

Optibus consultants can create GTFS data from available maps, timetables, or GIS library. We provide this service for more than 150 transit systems. Contact us to learn more.

Option 4
Editing in-house using spreadsheets

GTFS data consists of comma separated text files that can be edited with spreadsheet software. Planners can input and organize transit information, including routes, stops, schedules, and fare details and then convert it to GTFS format using scripts. This makes it possible to prepare data with off-the-shelf software, but can be labor intensive.

3 | Publish GTFS data

To make GTFS data available to the NTD and 3rd party trip planners such as Google Maps and Apple Maps, you'll need to host the data at a public stable URL.

Step 1 - Specify a license for the data such as the [CDLA-permissive license.](#)
Step 2 - Upload the GTFS files to the transit website or utilize a cloud storage service.
Step 3 - Promote the availability of the GTFS data to 3rd party application developers including [transit.land](#) and the [Mobility Database](#).

4 | Report to NTD

Transit systems supply their GTFS dataset in the NTD reporting process. Certify your GTFS URL and dataset are up-to-date on the NTD's D-10 form.

Download an easy to follow, shorter version checklist to evaluate your NTD requirement readiness levels. Link to [checklist](#)

We are here to help!

[Optibus](#) Scheduling and Planning products export GTFS data as part of their core feature set. Optibus' subsidiary, Trillium, specializes in GTFS management, ensuring that our clients' data is clean and accurate. [Contact us](#) if you have questions about GTFS or NTD reporting or need help to comply with this new requirement.