There Are Big Upcoming Changes in NTD Reporting Requirements. Are You Ready?

The FTA has mandated new changes in NTD reporting requirements for all transit agencies.

Were you aware? If so...

- Have you started the compliance process?
- Do you have a system in place? Does it involve manual collection of data and Excel spreadsheets?
- If so, or if you DON’T yet have a system for meeting the new requirements, want to quickly get ahead of the requirement—for the first year and ALL subsequent years?

Like the idea of aligning with an industry-leading transit-technology provider that’s fine-tuned the entire process, and can work, side-by-side, with your team, from start to finish?

Passio’s NTD Reporting and APC Certification Process can transform a potential burden into a distinct advantage. You won’t just be ahead of the curve. You’ll be defining the curve.

On the following pages, you’ll learn:

- The rationale for the new FTA reporting requirements
- What the new requirements are and what they entail
- The timetable for the changes
- About the new format (GTFS) the FTA has adopted, and why
- About Passio’s compliance-focused expertise in this arena
- How Passio’s NTD Reporting and APC Certification Process works
- How Passio will guide agencies through every step of the process
- About the next level of GTFS (i.e., GTFS-RT)
- How GTFS-RT can help agencies improve operations, customer service and rider satisfaction

Let Passio help you understand and navigate those changes—today and tomorrow. Read on, and reach out!
Ready for the New Federal GTFS Reporting Requirement?

Passio Offers Turnkey, Compliance-Assured Solutions

You’re no doubt aware of the newly mandated—and rapidly approaching—FTA reporting requirements for all transit agencies. Have you started the compliance process? Do you have a system in place? Want to quickly get ahead of the requirement—for the first year and all subsequent years?

Like the idea of aligning with an industry-leading transit-technology provider that’s fine-tuned the entire process, and can work, side-by-side, with your team, from start to finish?

That’s the goal of Passio’s NTD Reporting and APC Certification Process. But, let’s step back for a moment and explain the ins and outs of the upcoming changes...

What's the Rationale for these changes?

On 7/7/22, the FTA announced changes to the reporting requirements to the NTD (National Transit Database). The announcement reflects changes to Federal transportation law as a result of the Bipartisan Infrastructure Law (a.k.a. The Infrastructure Investment and Jobs Act), and was crafted with input from the transit industry.

An Evolving, Improving FTA

During the pandemic, the FTA realized it didn’t have sufficiently current and accurate data on transit ridership or transit service levels to inform Federal, State, and local decision-makers during a swiftly shifting crisis situation.

As such, FTA seeks to gather additional data to, in the words of the announcement, “obtain a representative nationwide snapshot of transit ridership and transit service levels.” While most agencies report to the FTA just once a year, the FTA plans to ask a few agencies to provide a week’s worth of sampling data based on geography and services, in order to stay on top of current trends.

This “deeper cut” of data highlights the FTA’s efforts to evolve and improve their performance in the wake of the pandemic. Fact is, the pandemic undoubtedly skewed ridership/transit service data, and these enhanced data-collection efforts on the part of the FTA can help shore up those data gaps. Along the way, and by harnessing technology, the agency becomes better stewards of taxpayer dollars.

When Do these Requirements Take Effect?

According the announcement, “Some of the proposed NTD changes would take effect beginning in NTD report year (RY) 2023 or 2024, which corresponds to an agency’s fiscal year, while others would take effect in calendar year (CY) 2023.”
A Mandatory Requirement
With these new announced changes, the FTA is making GTFS reporting mandatory, and the announcement provides details: “Under this proposal, NTD reporters with fixed route modes must create and maintain a public domain GTFS dataset that reflects their fixed route service. These NTD reporters must also maintain a web link from which the GTFS dataset can be collected...”

As noted, just 35% of transit agencies (“reporters”) have adopted the GTFS standard. If you’re one of the estimated 65% of agencies not yet on board with GTFS, you’re likely crafting your routes and service times by hand, and then loading it up into Excel.

The announcement even indirectly alludes to those agencies still doing labor-intensive manual data collection, when it notes: “FTA anticipates the greatest challenges will be for those reporters who do not have GTFS feeds yet...”

Data-Gathering is Just the Beginning
Know this as well: It’s not enough to just gather the data. If you decide to adopt Passio’s NTD Reporting and full GTFS support, Passio will guide you every step of the way with tools designed to “police” our process to ensure a “Fully Compliant” outcome.

But You Won’t Just Be FTA-Compliant, Or Even Just “Ahead Of The Curve.” You’ll Be Defining That Curve.

How Does Passio’s Solution Work?
Our customized NTD reporting will automatically collect, calculate, adjust and export the metrics required for NTD compliance. In addition, Passio’s APC solution will provide all “Actual” data (passenger miles and stop counts) required for NTD reporting.
Drilling down a bit more, our reporting module provides the following metrics—by time period, and by weekday or weekend:

- VRM (Vehicle Revenue Miles)
- Deadhead miles
- AVM (Actual Vehicle Miles)
- VRH (Vehicle Revenue Hours)
- Deadhead hours
- AVH (Actual Vehicle Hours)
- UPT (Unlinked Passenger Trips)
- PMT (Passenger Miles Travelled)

**First Stop: APC Certification**

The initial goal of this data-gathering process is certification of your APCs by the NTD. Passio’s integrated Hella 3D APC has earned NTD Certification Approval—ensuring a compliance-focused process that moves you toward that goal.

A Passio Data Analyst will work directly with your agency to generate the necessary documentation, and will provide you support throughout every step of the certification process. What does that process look like?

The new FTA requirements require transit agencies to certify the accuracy of their APCs by the NTD. To be certified, the APC system must meet the FTA’s 95%-confidence and 10%-precision levels for count accuracy.

In the first year of participation, transit agencies must submit a benchmarking plan, and in all subsequent years, they’re required to submit a maintenance plan.

**The Benchmarking Plan: Part 1—Manual Count**

The benchmarking part of the APC certification process includes two components. The first is a manual count by a transit manager, and is grounded in the following steps.

Vehicle-Information Collection: Passio will work with your agency to gather vehicle information such as make, model, year, and number of doors, while also documenting peak vs. off-peak ridership times, as well as types and quantity of each APC model in use. Passio will then analyze this information to create a sampling plan that meets FTA data requirements.

Because manual counts need to be conducted on a cross-section of relevant trips, routes and vehicles, this typically means looking at your agency’s entire fleet, and then choosing the route with the highest ridership, which, as a rule, will yield a representative sample of the entire system.

**Sampling-Template Creation**

We then provide your agency with a sampling template that ride checkers fill out during the sampling trips. It includes basic information such as route, stop, vehicle, start/end times, number of passengers boarded, alighted and total passengers on board, as well as showing the distance between stops.

NOTE: Both the Vehicle-Information Collection and the Sampling-Template Creation stages noted above, are part of both the benchmarking and maintenance stages.

Additionally, during this initial benchmarking stage, Passio will provide agencies with an Automatic Passenger Count Certification Checklist, which includes the following information:

- APC vendor/installation date
- Process of selecting trips to sample
- Internal agency procedures
- FTA required confirmations, and...
- Sample-collection-methodology descriptions
**The Benchmarking Plan: Part 2—Passio’s APCs**

The second component of the certification process is the deployment of Passio’s Automatic Passenger Counters (APCs)—essentially cameras that automatically count boarding passengers using sensors (3D bi-directional electronic imaging). Our APCs operate independently of any interaction from vehicle operators.

The APCs note time, date, vehicle, route, latitude, longitude, and stop information for reporting and tracking purposes. The manually-gathered data (from Part 1 of the Benchmarking Plan above) is then compared to the recorded APC counts to determine if the two counts fall within acceptable accuracy thresholds.

Assuming the manual-count data and the APC match, we then bundle both together and send it to the NTD—making it easy for the FTA to verify and certify your APCs.

**To summarize the Benchmarking Plan timeline, Passio will…**

1. Develop a sampling plan (i.e., which routes and trips, and when we’re going to manually check the automatic counters)

2. Execute the sampling plan (ride the bus and count the people)

3. Compare the sampling plan (how did the APC do vs. our manual count?)

4. Write up our thought process behind the sampling plan (i.e., “We picked route 12 because it has highest ridership; we picked Wednesday because it’s our highest ridership day; and we picked trip 3 and 4 because they are the busiest times of the day…”)

5. Set up maintenance plan for subsequent years (i.e., once a year, we will check highest ridership routes by manually checking or by watching via in-vehicle cameras)

6. Bundle all that data/documentation into a package for the agency to send to the FTA for approval

**The Maintenance Plan**

After the first-year submission of the benchmarking plan, agencies must submit a maintenance plan in all subsequent years. The maintenance plan includes calibrating APCs annually, and using a modified validation plan to ensure the agency’s continued certification.

As noted above, both the Vehicle-Information Collection and the Sampling-Template Creation stages explained in the benchmarking description above, are also part of the maintenance stage.

Why? Perhaps a new corporate or industrial facility with a large workforce was built in the area in the prior year. We’d want to consider if increased ridership in that area creates a new usage pattern that would change the route that we choose to test in year 2, 3, 4, etc., so we’re capturing the best representation of how people use the transit system.

**Assuming the agency has secured FTA approval for their benchmarking plan in their first year, in subsequent years, Passio will:**

1. Help the agency execute the maintenance plan, which entails selecting the route/time and collecting the sample data

2. Help compare the manually-collected data to the APC-collected data to determine the statistical variance between the datasets

3. Instruct your agency to send documentation of the maintenance plan results to FTA

**PASSIO’S COMPREHENSIVE CERTIFICATION-SUPPORT PROCESS MEANS WE'RE RIGHT BESIDE OUR CUSTOMERS EVERY YEAR HELPING THEM NAVIGATE ALL THE NECESSARY STEPS TO CONTINUE TO CERTIFY APC COUNTS AND MEET FTA REQUIREMENTS**
THE NEXT DATA FRONTIER: GTFS-RT (Real-Time)

The only GTFS data the FTA requires transit agencies to submit annually is static data—data that simply defines the general shape and frequency of your system.

But, there’s another level—GTFS-RT—(the RT stands for “Real Time”), which builds on the static GTFS transit data by telling the rider what is happening right now.

Technically speaking, GTFS is a collection of static comma-separated text files, while GTFS-RT is a series of URLs that contain feeds of dynamic data. And just so you know...

BOTH STATIC AND REAL-TIME GTFS ARE ALREADY BUILT INTO ONE PASSIO NAVIGATOR. IF YOU’RE OKAY WITH JUST HAVING STATIC (GTFS) FILES FOR NOW, GREAT. JUST KNOW THAT, AT ANY TIME IN THE FUTURE, YOU CAN UPGRADE SEAMLESSLY TO REAL-TIME DATA (GTFS-RT) WITHOUT MISSING A BEAT.

What Are the Benefits of GTFS-RT?

Easy Access to Reliable, Consistent Data
Because GTFS-RT is based on open-source standard, it’s available to any transit agency, and without the hassles of managing the upkeep and updates required of a data feed created in-house.

Seamlessly Feeds into First- & Third-Party Rider Apps
Agencies can channel GTFS-RT feeds into their own first-party rider apps (preferred by transit agencies for their customization potential)—as well as third-party apps favored by riders (e.g., Google Maps, Apple Maps, Transit app, etc.)—always keeping the needs of riders front and center.

Common “Language” Simplifies & Facilitates
When all departments are plugged into a uniform dataset (vs. a common scenario of different datasets within the same agency), it vastly simplifies communication across the agency while enabling them to create tools built on, and grounded in that “common language.”

How Do We Collect the GTFS-RT Data?

We install GPS devices with a cellular connection into a transit system’s vehicles, which tells us where the vehicles are at any given point in time, allowing us to generate real-time ETAs of when a vehicle is going to arrive at a stop.

Because that same real-time data (which flows into the RT feeds) would be very useful to riders as well, not surprisingly, that data also feeds into Passio GO, our first-party rider app.

Most transit agencies considering adding a rider app to their system want a first-party app like Passio GO, because they can customize it (or even white-label it) to their needs, so they can give their riders the real-time transit info they demand.

NOTE: A transit agency that has the Passio GO app will automatically get the GTFS-RT feeds.

That said, some riders will still want to use a third-party app like Google Maps, Apple Maps, Transit app, etc., and GTFS-RT will produce real-time data for those apps as well.

It’s all about to meeting the riders where they are.
How Does GTFS-RT Data Show Up to You & Your Riders?

Passio Navigator (i.e., the “Main Brain” of the Passio transit solution) follows the most common methodology by incorporating three separate feeds for GTFS-RT data: Service Alerts, Trip Updates and Vehicle Positions.

1. Service Alerts
This feed is a customizable text description of an event causing a slowdown—on a specific route, at a specific stop or across the system. With Passio Navigator, we use our existing Passio GO alerts to decide which alerts customers see in their GTFS-RT feed.

2. Trip Updates
This feed generates ETA data for each active trip—the upcoming stops and the expected arrival time of the next vehicle.

3. Vehicle Positions
This feed reports each vehicle’s current location and speed, which trip they are on and which stop they’re servicing or approaching.

Other Benefits of GTFS-RT

Flexible Alerts
System alerts can be set for a specific stop/route or the entire system, and all alerts are visible inside Passio GO. To set an alert to auto-publish to the GTFS-RT feed, just check a box.

Fast, Reliable, Repeatable Feeds
Since our feeds are direct reads from a database table, they’re fast and consistent, every time. No delays or long running calculations before the request is served.

Automatic Sanitization & Normalization
Our feeds come directly from a database table. We use location listeners and system observers to populate the GTFS tables. This layer allows us to run business rules before inserting new data. These business rules make sure the data is accurate and as up-to-date as possible.

No More Spinning Buses!
GPS heading data can get squirrelly at 0-3 mph, and can show stopped buses as spinning—confusing riders as to the actual direction in which the vehicle is heading. Our system is designed to ignore heading values of vehicles traveling under 5 mph, eliminating spinning buses.

The Antidote to Poor GPS Signal
Underground transit centers and buses moving through urban centers can both lead to weak, inaccurate GPS—and to a distorted vehicle position on a rider app. Our dead reckoning algorithm neutralizes these impacts, yielding reliable rider-facing data on vehicle location and direction.

How Good Is GTFS-RT Data? Good Enough for Us!
We use GTFS-RT feeds in-house, in a variety of ways:

- Our developers use them as our API source to help us build tools.
- Our customer service reps use them to help our clients diagnose issues.
- We rely on them to improve our software.

Bottom line, the GTFS-RT feeds are buttoned up and reliable. It’s not just an add-on we built to meet a prospect’s RFP specification. It’s integral to how we think about transit because we know how crucial it is for riders to be able to trust the data on their devices.

Why Struggle with Compliance?
If you’re one of the estimated 65% of agencies who hasn’t yet adopted the GTFS standard, you’re likely scrambling and struggling to get your ducks in a row before the deadline (as early as 2023!).

WHY NOT TAP THE EXPERTISE OF A LONGTIME TRANSIT-TECHNOLOGY INDUSTRY LEADER? LET PASSIO SHOULDER THE BURDEN, AND QUICKLY AND EFFICIENTLY MOVE YOUR AGENCY TOWARDS FULL FTA COMPLIANCE—BOTH NEXT YEAR AND BEYOND.

For more information on Passio’s NTD Certification Process, or to see a demo of our solutions visit passiotech.com email: info@passiotech.com or call: 678-825-3456 ext 1.