



## **SIMPLIFYING THE OPEN TRANSIT DATA DEBATE: A COMPREHENSIVE GUIDE TO PROVIDING REAL-TIME INFORMATION TO YOUR PASSENGERS**

With the advent of technologies such as Google™ Maps, web-enabled cell phones and vehicle tracking, it is now possible to provide passengers with up-to-date schedules as well as real-time bus departure information from virtually anywhere. However, in order to provide these services, agencies need to take their schedule and departure data and make it accessible to the public.

This is where difficulty and controversy arise. Most agencies do not have the resources and/or capability to create these applications themselves. To circumvent this problem, some agencies have chosen to release their data to the general public. Releasing schedule and departure time data means this information is freely available and accessible for use by anyone. The raw data can then be used by interested developers in maps, mobile applications, and more<sup>1</sup>.

As more agencies release their data, a heated debate has started amongst public transit officials, the public, and the developer community. The core argument for releasing transit data is that because it is collected by public, taxpayer-funded agencies, it should be open to all citizens. The counter to this is that struggling agencies may be able to earn welcome revenue from developers willing to pay for access to this data. Public transit supporters and developers oppose this with the belief that open data enables developers to create applications that make transit systems more user-friendly, encouraging more people to ride transit.

## WHAT IS THE DATA USED FOR?

Releasing transit data can give passengers access to advanced trip planning technologies such as:

### ■ Google™ Transit

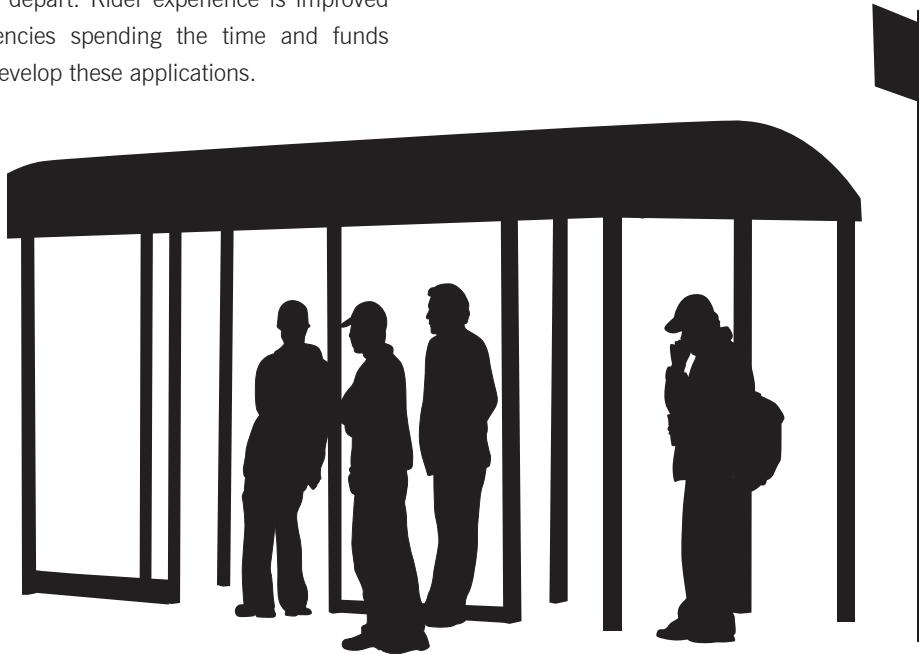
This public transportation planning tool combines schedule data and Google's mapping technology. Passengers can visit [www.google.com/transit](http://www.google.com/transit) and enter their starting point and final destination. Passengers are provided with step-by-step directions to their destination using public transit. Getting data on Google™ Transit is easy and free of charge. To see how to participate, visit: <http://maps.google.com/help/maps/transit/partners/>

### ■ In-store Departure Screens

By using an agency's open-source departure data, stores, restaurants, and other public areas can have monitors which update the real-time departure information for area transit options. This encourages more people to use transit and can also spur economic growth as people can shop or grab a coffee while waiting for the bus without the fear of missing their bus or train.

### ■ Independent Developer Applications

Developers use schedule and real-time departure data to create mobile applications which passengers can access on the web or their cell phone. The applications can provide useful information such as the closest stops to a user's location, the quickest route to a destination, and when the next bus or train will depart. Rider experience is improved without agencies spending the time and funds needed to develop these applications.



## IS RELEASING DATA BENEFICIAL?

Releasing schedule data can provide an agency with many benefits, including:

### ■ Free Development of Mobile Applications

Open access to transit data allows developers to create useful mobile applications for riders without the agency needing to contribute time or money towards development. Chris Dempsey, assistant transportation secretary for the Massachusetts Department of Transportation, says: “With transportation budgets stretched thin across the country, we see opening transportation data as a tremendous opportunity for cost savings. Enabling software developers to build apps with our data is a huge win for our riders—all at essentially no cost to the agency.”<sup>ii</sup>

### ■ Improved Customer Service

Riders have schedule information at their fingertips which allows them to use transit as efficiently as possible. Also, when passengers can access real-time bus arrival information, they won't waste time waiting for a late bus. This creates happier customers and fewer customer service calls for dispatch to answer.

### ■ More Accurate Applications

Developers are going to create applications for an agency whether data is released or not; however, the accuracy of these applications relies on the availability of data. Scraping transit websites for data is an onerous task, which means developers are unlikely to update their data regularly. This leads to inaccurate applications that can actually impede customer service and reflect negatively on the agency. Open access to data means developers always have updated, accurate schedules and departure times to ensure applications are correct and helpful.

### ■ Time Saved for Agencies

Time currently spent filling multiple requests for data can be saved as everyone can access the data from one central web service. As Tim McHugh, Chief Technology Officer at TriMet says: “One of the pressures that we have as an IT department in a transit agency is that we're small and we can't provide every customized solution people ask for. It's difficult to keep pace with the changes in technology. So making the data available is something that we're very familiar with, and we can spend our energies on making it well-formed for the public to consume, and then turn it around so that they can develop the tools themselves. It's like having an army of developers available to us.”<sup>iii</sup>

### ■ Increased Ridership

Mobile applications, such as trip routing amongst multiple agencies, make transit easier to use for new riders which encourages more people to use public transit. “One of the things we're excited about is the potential for increasing ridership on the bus lines, and getting people excited about riding buses,” said Dempsey. “These applications will give people more confidence that buses are reliable.”<sup>iv</sup>

### ■ Positive Image for Agencies

Agencies that work with developers to provide more services to customers are seen as trying to make their riders' transit experience more enjoyable. This reflects positively in the public eye and encourages more people to use transit.

---

The only negative some agencies see in providing their data to the public is the elimination of potential revenue from selling the data to developers. However, because the data is generated by taxpayer-funded agencies, the general consensus is that agencies should not profit from this data. Agencies that kept their data closed in hopes of selling it, such as New York City's MTA—who recently released their data—have experienced extensive backlash from both the developer community and transit passengers.

## WHO HAS RELEASED THEIR DATA?

Currently, 102 out of the 767 transit agencies in the United States have released their data to the public<sup>v</sup>. Widely seen as the leader of this movement, TriMet, in Portland, Oregon has offered their transit data to Google and the public since 2005. Beginning with an inquiry to Mapquest, Yahoo! and Google, TriMet was pivotal in the creation of the Google Transit Trip Planner in conjunction with Google developer Chris Harrelson<sup>vi</sup>.

Since then, developers have created over 25 applications using TriMet's data to make riding public transit easier for passengers. The applications provide a multitude of information including public transit directions, arrival information, and even alerts for napping passengers as they near their destinations<sup>vii</sup>.

According to Tim McHugh, TriMet's Chief Technology Officer, there were a variety of reasons TriMet

decided to release their data: "We want to provide all the information that we know to be useful and put it out there for other people to figure out the right uses... We were getting requests from customers for data in specific formats or on specific devices and what we really wanted to do was flip it around to the public, to say, 'Okay, well, there's a lot of good programmers out there. Here are the tools you need to do it.' And they are coming up with a lot of creative ways to use the data and make it more useful for riders that TriMet would have never had the resources to come up with."<sup>viii</sup>

In the past twelve months, as the data debate has intensified, a handful of other large transit agencies have made their data public including MBTA in Massachusetts, the CTA in Chicago, SEPTA in Philadelphia, SFMTA in San Francisco, and New York City's MTA<sup>ix</sup>.



# HOW TO RELEASE DATA

Giving the public open access to data can be simple for any organization. Follow these short steps to be on the path to improving customer service and increasing ridership.

## 1 Export data to the General Transit Feed Specification (GTFS)

Visit <http://maps.google.com/help/maps/transit/partners/participate.html> and follow the process to publish data to the GTFS. GTFS is the widely accepted format for transit data. Other formats, such as Transit Communications Interface Profiles (TCIP), TransXChange, and ATCO-CIF, also exist but aren't used extensively in North America\*. Publishing data to the GTFS will allow for inclusion in Google™ Transit. Currently, due to the significant volume of requests from agencies, it is advised that agencies sign up to be included on the Google Transit Partner waiting list<sup>xi</sup>.

## 3 Create a License Agreement or Terms of Use

A license agreement, or terms of use, will outline how the data can be used by developers. An example can be seen here: [http://developer.trimet.org/terms\\_of\\_use.shtml](http://developer.trimet.org/terms_of_use.shtml).

## 4 Keep Developers Aware of Schedule Changes

A simple RSS feed can alert developers when changes have been made to an agency's schedule data so they can update their applications and ensure they are accurate.

## 2 Provide a URL where a feed can be downloaded

Create either a developer page on an agency site, such as <http://developer.trimet.org>, or provide a URL from a third party that is authorized to host the feed, like the GTFS Data Exchange (<http://www.gtfs-data-exchange.com/>).

# CONCLUSION

Agencies that release their data to the developer community will improve customer service, save time and money, increase ridership, and generate a positive image. With open access to data, developers can create mobile applications that make riding transit easier for customers without agencies needing to invest time and money into development. Open, transparent data is the future of the transit industry. Agencies that willingly provide this data can give customers convenient applications to make their transit experiences more satisfying and encourage more people to use public transit.

## Sources

- i "Help make New York Better". <http://nytransitdata.org>. 7 Jan. 2010
- ii "New Website Prompts Transit Agencies to Open Data to the Public." 18 Dec 2009. <http://syslab.com/blog/2009/12/18/new-website-prompts-transit-agencies-to-open-data-to-the-public>. Accessed: 7 Jan 2010
- iii "Open source and open data make for transit innovation." 11 Sept 2008. <http://www.trilliumtransit.com/blog/2008/09/11/trimet-innovations-in-transit-data-publishing/>. Accessed: 7 Jan 2010.
- iv "The Case for Open MTA Data: Transparency, Savings, and Easier Riding." 23 Sept 2009. <http://www.streetsblog.org/2009/09/23/the-case-for-open-mta-data-transparency-savings-and-easier-riding/>. Accessed: 7 Jan 2010.
- v "All Transit Agencies with Open Data." 18 Jan 2009. <http://www.citygoround.org/agencies/?public=public>. Accessed: 18 Jan 2010
- vi "How Google and Portland's TriMet Set the Standard for Open Transit Data." 11 Jan 2010. <http://syslab.com/blog/2010/01/11/how-google-and-portland2019s-trimet-set-the-standard-for-open-transit-data>. Accessed: 18 Jan 2010.
- vii "TriMet App Center." <http://trimet.org/apps/>. Accessed: 7 Jan 2010. \
- viii. "Open source and open data make for transit innovation." 11 Sept 2008. <http://www.trilliumtransit.com/blog/2008/09/11/trimet-innovations-in-transit-data-publishing/>. Accessed: 7 Jan 2010.
- ix "All Transit Agencies with Open Data." 18 Jan 2009. <http://www.citygoround.org/agencies/?public=public>. Accessed: 18 Jan 2010
- x "Standard Schedule Formats." [http://opentransitdata.org/wiki/index.php?title=Standard\\_Schedule\\_Formats](http://opentransitdata.org/wiki/index.php?title=Standard_Schedule_Formats). Accessed: 7 Jan 2010.
- xi "Add Your Transit Data to Google Maps." <http://maps.google.com/help/maps/transit/partners/participate.html>. Accessed: 18 Jan 2010.