

## TRANSIT STRATEGIES PROVIDE BETTER INFORMATION

For people to be able to use transit, they must first know that it is there and be able to understand how to use it. This means that it is extremely important for transit systems to provide clear and concise information on their available services. Transit typically serves a very broad cross-section of an area’s residents, workers, and visitors. Because people access, use, and process information in different ways, transit systems must deliver information in a variety of ways. For example, some older adults are not web-literate, so providing information via the web will not reach them; telephone and printed information must be provided as well. At the same time, telephone and printed information will not reach many younger riders, who rely primarily on the internet. For transit systems to reach the people that they are there to serve, it is essential that they provide effective information in ways that will reach potential riders. Transit information provided by third parties is also expanding rapidly, which is creating many new ways to share information.

### TRANSITSCREEN PROJECTED TRANSIT INFORMATION



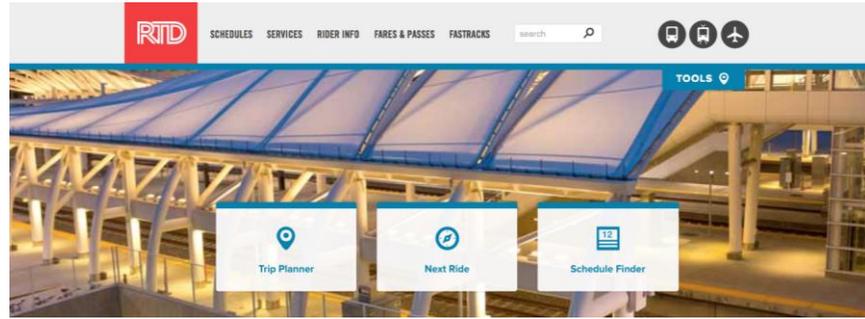
## BASIC INFORMATION AND DELIVERY METHODS

Most large transit agencies provide a wide array of public information, telephone support, printed materials, full-featured websites, and real-time information. The predominant types of information that are widely distributed include:

- **Websites**, which are the initial point of access for most people and provide complete information on available services
- **System maps** that provide an overview of available services
- **Route schedules and maps** that provide detailed information on a route-by-route basis
- **Web and app-based route, stop, schedule, and real-time information**, often provided by third-parties, may include predicted arrival times at stations and stops and maps that display actual transit vehicle location.

PUBLIC INFORMATION EXAMPLES

Website



System Map



Route Schedules and Maps

Schedule Information Interactive Street Map

**SL1 - Logan Airport - South Station via Waterfront** Print this Schedule

Direction: Inbound Timing: Mon-Thurs Redisplay Time

**SL1 SILVER LINE SOUTH STATION : Weekday Effective 09/05/15**

Terminal A	Terminal B Stop 1	Terminal B Stop 2	Terminal C	Terminal E	Silver Line Way Before Manulife Building	World Trade Center Station	Court House Station	So Station Silver Line
05:38 AM	05:39 AM	05:41 AM	05:43 AM	05:46 AM	05:55 AM	05:57 AM	05:59 AM	06:01 AM
05:54 AM	05:55 AM	05:57 AM	05:59 AM	06:02 AM	06:11 AM	06:13 AM	06:15 AM	06:17 AM
06:04 AM	06:05 AM	06:07 AM	06:09 AM	06:12 AM	06:21 AM	06:23 AM	06:25 AM	06:27 AM

Google Transit

The screenshot shows the Google Transit interface. On the left, there is a search bar with the origin '806-824 Main St, Nashville, TN 37206' and the destination 'MTA Music City Central, 400 Charlotte A'. Below the search bar, it shows the departure time '10:45 AM - 10:53 AM' and a duration of '8 min'. A 'Details' section lists several transit options with their respective durations (9 min, 8 min, 9 min). On the right, a map shows the route in red, with various transit stops and lines marked.

Real-Time Information



Information is delivered in four basic ways:

- **Internet:** As with other types of information, the majority of distribution has moved to the internet. Nearly all transit systems now provide service information on their websites and mobile apps where people can either view information electronically or print it themselves.
- **Signs at Stations and Stops:** Many rail and major bus stations have real-time information signs that display the arrival of the next rail and bus trips. Real-time information signage is also being added to many smaller stops.
- **Third-Party Distribution:** Third-party distribution has become increasingly common and has greatly expanded the way that people can access information. This approach began when Google developed a standard format known as General Transit Feed Specification (GTFS) for publishing transit schedule information and presenting transit information on Google Maps. That approach has since expanded to smartphone apps and to real-time travel information.
- **Physical Distribution:** Printed maps, schedule cards, and “rider guides” are typically distributed physically onboard buses and at key transit locations.

## WEBSITES

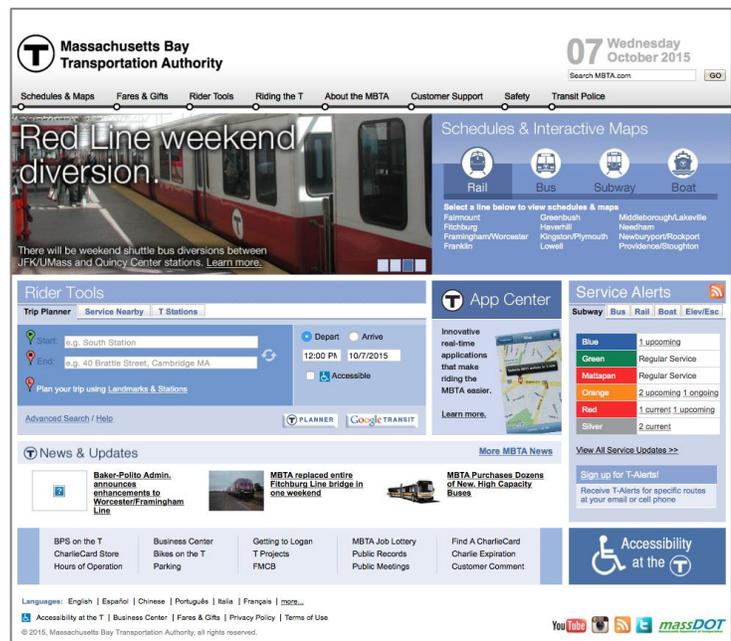
The internet has become the primary source of information for most riders, and all transit systems have websites. The types of information that are provided on all websites include:

- ➔ System map
- ➔ Route-by-route schedule information and maps
- ➔ Complementary paratransit service information
- ➔ Service alerts
- ➔ Fare information

Newer types of information that have also become common include:

- ➔ Mobile website for smartphones
- ➔ Trip planning, either directly the website or through integration with third-party sites such as Google Maps
- ➔ Real-time information on vehicle locations and predicted arrivals
- ➔ Ticket and pass purchases
- ➔ Customizable e-mail or text alerts for service disruptions, agency news, etc.
- ➔ Integration with social media, such as Twitter and Facebook, to provide service alerts and updates on transit initiatives

### BOSTON MBTA HOMEPAGE



The screenshot shows the MBTA website homepage with a navigation bar at the top containing links for Schedules & Maps, Fares & Gifts, Rider Tools, Riding the T, About the MBTA, Customer Support, Safety, and Transit Police. A main banner features a red train and the text "Red Line weekend diversion" with a sub-headline "There will be weekend shuttle bus diversions between JFK/UMass and Quincy Center stations." Below the banner are sections for "Schedules & Interactive Maps" with icons for Rail, Bus, Subway, and Boat; "Rider Tools" including a Trip Planner and Service Nearby; "App Center" with a download button; and "Service Alerts" with a list of alerts for different lines (Blue, Green, Orange, Red, Silver). A footer contains language options, accessibility information, and social media links.

The quality of transit system websites varies greatly—some are very attractive and easy to use, while others are dated and difficult to use. Key elements in making websites attractive, useful, and easy to use include:

- **Visual design**—first impression, appropriate amount of content, good organization, professional appearance
- **Ability to quickly find basic information** such as a system map, schedules, route maps, service span, paratransit service, fare info, etc.
- **Placement of service alerts**—prominently placed updated information on service delays, disruptions, etc.

- **Trip planning**—easy to find and easy to use function that allows riders to plan a trip (often uses Google Transit)
- **Real-time passenger information**, which is becoming increasingly expected by transit riders
- **Mobile version of website**—customized version of website for mobile devices

## SYSTEM MAPS

System maps illustrate a transit system’s entire network of services. Riders reference system maps to help them plan and travel within the transit system. System maps typically follow one of two basic designs: overlay or schematic. An overlay map design resembles a typical map with additional transit information “overlaid” onto the base map. This design provides a wealth of detail and content for reference, including roads, schools, physical topography, and points of interest. A schematic map design is a more abstract representation of the transit system, with minimal additional detail. This design maximizes readability and minimizes clutter. Some maps seek to combine elements of both design styles, though they are still primarily one or the other.

**NASHVILLE MTA OVERLAY-STYLE SYSTEM MAP**



**WMATA (WASHINGTON, DC) SCHEMATIC SYSTEM MAP**



## SCHEDULES

Schedules are a second basic type of information provided by transit systems. Some transit systems, especially larger ones, produce individual “schedule cards” for each route; other transit systems, most often smaller ones, include these on their system maps. Schedule information is delivered to riders:

- ➔ **Via transit agency websites**
- ➔ **Via trip planners such as Google Maps**
- ➔ **Via third-party websites**
- ➔ **Via third-party smartphone apps**
- ➔ **Via text messages**
- ➔ **At stations and stops, both in posted and electronic form**
- ➔ **Onboard transit vehicles and at key transit locations**

### Trip Planners

Trip planners provide riders the ability to enter their origin, destination, and desired departure time to find their best transit options. Many transit systems embed a trip planner within their website or provide links to third-party trip planners, the best known of which is Google’s integration of transit routes, stop, and schedule information within Google Maps. Google Transit is also often the best source of information for trips that require use of services provided by different transit systems, since it is not tied to any individual system.

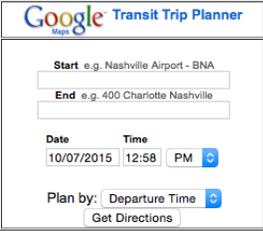
**LINK TO GOOGLE MAPS TRANSIT DIRECTIONS WITHIN NASHVILLE MTA WEBSITE**

## MTA Partners with Google Transit






**Transit Time**



The Nashville MTA has partnered with Google Transit, a public transit trip planning feature of Google Maps. This feature allows you to plan your bus route by entering the date and time that you would like to arrive at your destination or begin your trip. The trip planner will provide three options with the travel time and number of transfers.

Simply put your starting location in the start field and your arrival destination in the end field. Add your destination or arrival time and click Get Directions. If you do not receive directions, you may need to list Nashville, TN within the option fields to narrow the search.

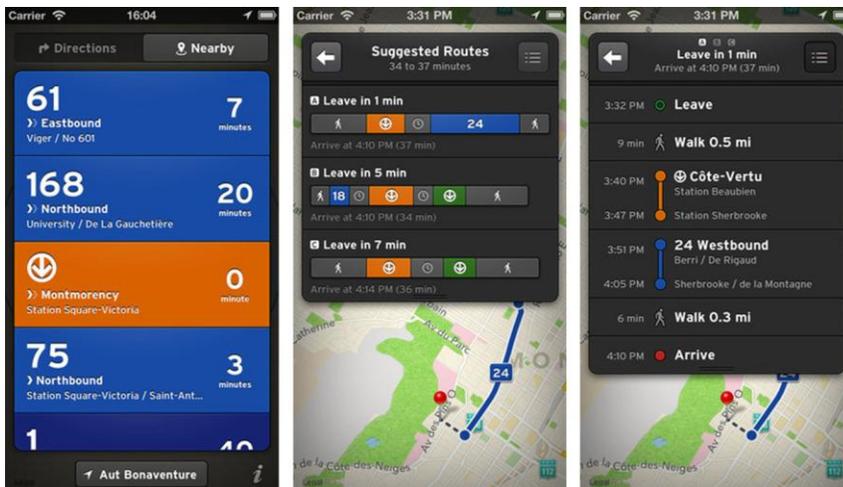
Google Maps also provides walking directions to assist you in reaching your destination once you get off a bus and has street views to help you find the closest transit stop and become familiar with your destination before you get there.

While participation in the Google Transit program is free, participating agencies must provide Google with service data in a specialized Google Transit Feed Specification (GTFS) format on an ongoing basis. Therefore, it does require staff time to participate in the program and offer this service. It is now generally expected that transit systems will publish transit schedule information on Google Maps.

**Smartphone Apps**

As the use of smartphones has become more prevalent, and because people using transit are on the move, the use of smartphones to obtain schedule information continues to increase rapidly. In most cases, transit systems make the GTFS data that they produce for Google Maps publicly available for use by third-party developers. Some will produce transit system-specific smartphone apps, while others produce apps that provide transit information for systems throughout the country. Beyond the ongoing provision of GTFS data, the development of these apps does not require any involvement by the transit agencies, and transit riders choose their favorite app.

**TRANSIT APP**



**Text Messaging**

For those who do not have smartphones, schedule information can be provided by text messaging. With these systems, the transit rider texts the stop number to the transit system and receives a text in response that provides the scheduled arrival times of the next bus or series of buses.

## REAL-TIME INFORMATION

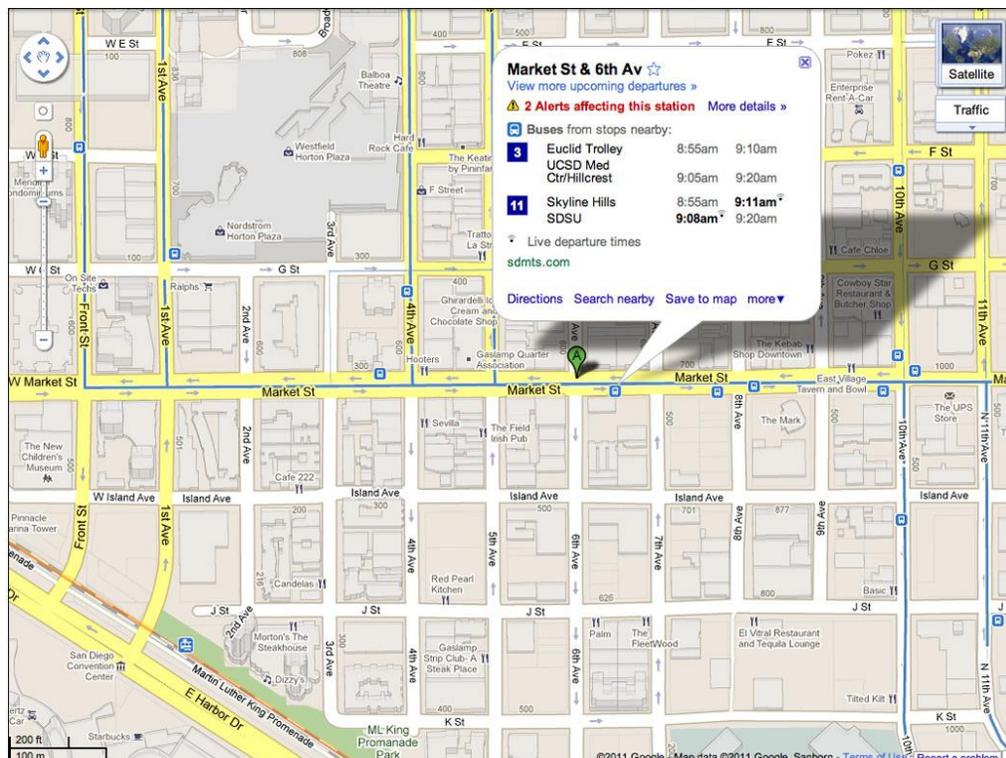
Real-time information uses GPS-based Automatic Vehicle Location (AVL) technology to track and predict the locations of transit vehicles in real time. This provides information on estimated arrival/departure times, vehicle locations, and service disruption or delay alerts. Once the back-end system has been installed to track vehicles and deliver the information, the information is presented to riders in basically the same ways as for schedule information:

- ➔ Via transit agency websites
- ➔ Via Google Maps
- ➔ Via third-party websites developed by AVL vendors (for example, NextBus)
- ➔ Via third-party smartphone apps
- ➔ Via text messages
- ➔ At stations and stops

### Trip Planners

When available, real-time transit information is usually provided within trip planners. In most cases, this information is presented visually, often with a map that shows buses moving along their routes.

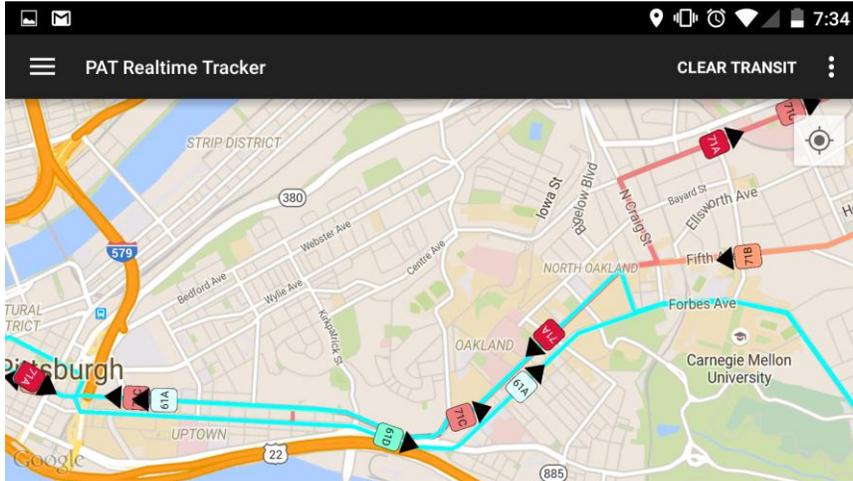
### GOOGLE MAPS REAL-TIME TRANSIT INFORMATION



### Websites and Smartphone Apps

As with schedule information, many apps provide both schedule and real-time information. Many riders, and especially Millennials, desire smartphone-based schedule and real-time schedule information more than any other type of information.

### PITTSBURGH PAT REAL-TIME TRACKER APP



### At Stations and Stops

Real-time information signs and displays are most common at rail stations, Bus Rapid Transit (BRT) stations, and transit centers. They are also often provided at higher volume bus stops. The most commonly used signs provide information on the next few arriving buses, while more elaborate displays provide information on all or many services, along with maps of bus locations.

### REAL-TIME PASSENGER INFORMATION DISPLAYS AT STATIONS



## POTENTIAL NASHVILLE MTA AND RTA IMPROVEMENTS

Of the basic types of information that riders now expect, most is available for Nashville MTA and RTA of Middle Tennessee services. However, there are some key gaps and several ways that existing information could be improved.

### NEW AND IMPROVED SINGLE WEBSITE

Nashville MTA and RTA currently have independent websites, even though many RTA riders also use Nashville MTA services and the two agencies share the same management and administrative staffs. Especially for RTA riders, the need to go to two different websites to obtain information is inconvenient and inefficient. Existing riders and potential new riders would be better served by a single Nashville MTA/RTA website.

## NASHVILLE MTA WEBSITE

## RTA WEBSITE

In addition, while both websites are functional, both are somewhat dated. The Nashville MTA website has a heavy focus on efforts to meet internal needs rather than on information that is most useful to passengers. For example, and as shown above, the most prominent feature of the current website is a help wanted ad for drivers, along with advertisements about Nashville MTA and the Adopt-A-Stop program. (Conversely, the RTA website does focus on information for passengers.) A mobile version of a combined website should also be provided.

As RTA services expand, connections with local services such as Clarksville Transit System, Franklin Transit Authority, and the Murfreesboro Rover, will become more important. The RTA website could also include information on those service, or links to the websites of those services.

## SINGLE SYSTEM MAP

Nashville MTA and RTA also publish two different system maps, each of which contains much of the same information (for example, the downtown Nashville inset). In the same manner as a single website, Nashville MTA and RTA could publish a single system map. In addition, as with the website, a single system map could also include information on Clarksville Transit System, Franklin Transit Authority, and Murfreesboro Rover service.

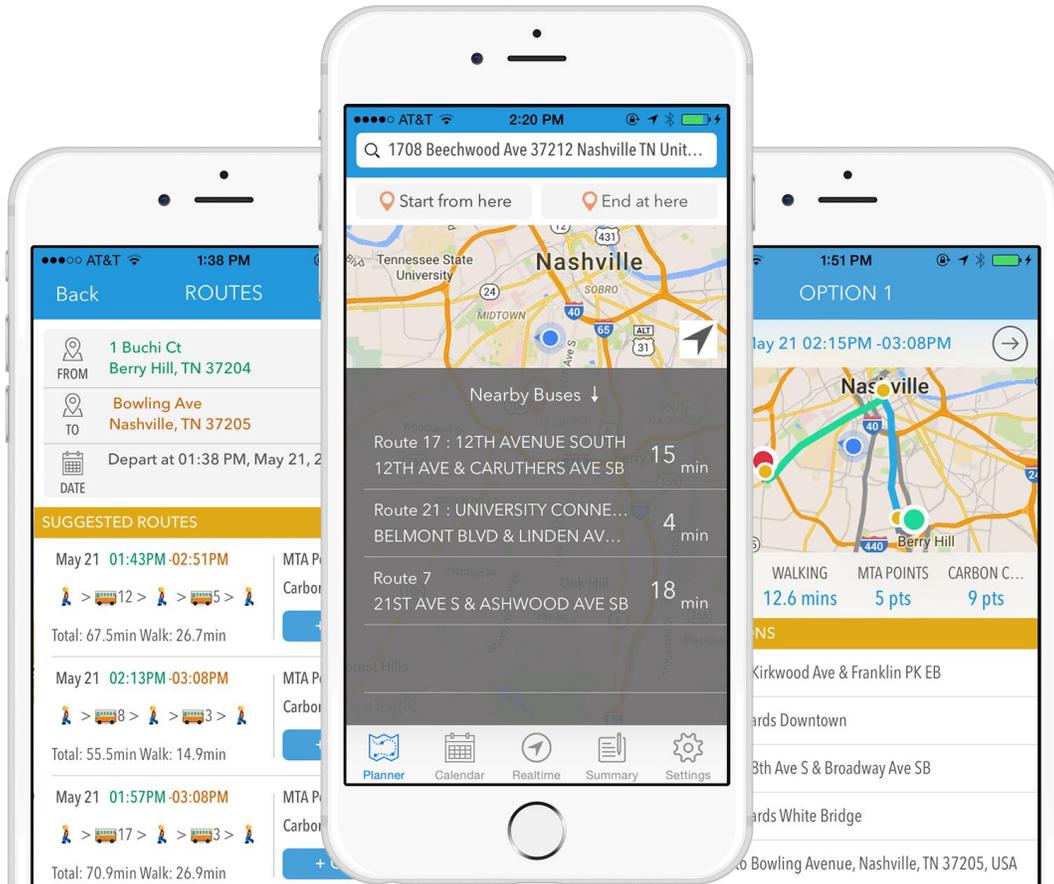
## REAL-TIME PASSENGER INFORMATION

### Via Websites and Smartphones

Nashville MTA is currently in the process of implementing the back-end improvements needed to provide real-time information for all of its routes. The agency has partnered with Vanderbilt University's Institute for Software Integrated Systems on the development of an app to make this information available via smartphone. The app is expected to be available by late 2015.

At this time, the app is only being developed for Nashville MTA services and not for RTA services. Expansion of the program to include RTA buses would provide the same types of information to RTA riders, for whom the need is arguably greater since most RTA services are very infrequent.

### NASHVILLE MTA REAL-TIME INFORMATION PROTOTYPE



### At Stations and Stops

Nashville MTA currently provides real-time information along its BRT lite routes. With the development of systemwide real-time information, the agency could also provide real-time information at additional locations such as Music City Central and major bus stops for all routes that serve those locations.

### REAL-TIME INFORMATION AT BUS STOP FOR MULTIPLE ROUTES

