

# **VRE Mobile Developer's Guide**

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# 1 Overview

VRE provides several data feeds via its website, [www.vre.org](http://www.vre.org). Schedule data, real-time train locations, and schedule status updates are all available. These data feeds are provided in the format documented in the Google Transit Feed Specification (GTFS) and the GTFS-Realtime specification. Data is provided “as-is” and VRE makes no warranty regarding the fitness for use or accuracy of the data. Other restrictions apply; see section 5 below for details.

# 2 GTFS Feed

The GTFS feed provided by VRE adheres to the GTFS specification as defined by Google. At the time of this writing, the information on this specification can be found at the following URL:

[http://code.google.com/transit/spec/transit\\_feed\\_specification.html](http://code.google.com/transit/spec/transit_feed_specification.html)

The VRE GTFS feed can be accessed at the following URL:

[http://www.vre.org/gtfs/google\\_transit.zip](http://www.vre.org/gtfs/google_transit.zip)

The VRE GTFS feed contains all files required by the specification and several optional files. The following table lists each GTFS file and indicates if VRE does or does not provide this file in its feed. The table also provides a description of VRE’s use of each file.

<b>GTFS File Name</b>	<b>In VRE Feed?</b>	<b>Description</b>
agency.txt	Yes	Includes information about VRE, the owner of the data.
stops.txt	Yes	Includes information about each of VRE’s stations.
routes.txt	Yes	Includes information about each of VRE’s train lines, Fredericksburg and Manassas, for the inbound and outbound directions.
trips.txt	Yes	Includes information about each train run included in each schedule. As per the GTFS specification, each train run has a unique identifier, which is comprised of the id of the schedule in which it is included and the train number.
stop_times.txt	Yes	Includes information about the departure times for each defined trip included in each schedule. Times are provided for each stop in a trip.

calendar.txt	Yes	Includes information for the begin and end dates for the current and future schedules that have been defined.
calendar_dates.txt	Yes	Includes information for dates when a temporary or S-Schedule is planned. This file will contain 2 entries each time a temporary schedule or S-Schedule overrides the normal schedule; one entry to indicate that the temporary or S-Schedule is added, and one entry to indicate the normal schedule is removed for that date.
shapes.txt	Yes	This file includes the shape files for both the Fredericksburg and Manassas lines in both directions. This file will not change frequently.
fare_attributes.txt	No	This file is not included in the VRE GTFS feed.
fare_rules.txt	No	This file is not included in the VRE GTFS feed.
frequencies.txt	No	This file is not included in the VRE GTFS feed.
transfers.txt	No	This file is not included in the VRE GTFS feed.

A new google\_transit.zip file will be uploaded to the VRE web site each day at approximately 12:05 AM. For the most part, the data contained in google\_transit.zip will be valid for 90 days or more, and although a new file is uploaded daily, it will generally contain the exact same data as the prior day. The exception to this is when there are situations where VRE will declare an “S” schedule in the early morning hours during a severe weather event (such as a snow storm). When an S-Schedule is activated in this manner a new google\_transit.zip file will be uploaded to the VRE web site and the calendar\_dates.txt file will include the current date as a date when the S-Schedule is active.

### **3 GTFS-Realtime Feed**

In addition to the GTFS feed, VRE also provides two GTFS-Realtime feeds. GTFS-Realtime feeds reference data in the GTFS feed, so the ability to digest the GTFS feed is a pre-requisite for utilizing the GTFS-Realtime feed to its full extent.

Information on the GTFS-Realtime specification can be found here:

<http://code.google.com/transit/realtime>

VRE provides two of the three real-time feeds in the specification. The VehiclePosition feed provides information about the location of each train that is scheduled to be running. The TripUpdate feed provides information about how each train scheduled to be running is performing according to its schedule. In other words, the TripUpdate feed provides delay and cancellation information for each train.

The VehiclePosition feed can be accessed here:

<http://www.vre.org/gtfs-realtime/VehiclePositionFeed>

The TripUpdate feed can be accessed here:

<http://www.vre.org/gtfs-realtime/TripUpdateFeed>

Both of these feeds are binary data (as per the specification) and are updated approximate once per minute. Accessing these feeds more frequently than once per minute is not useful and is discouraged.

## **4 Reference**

### **4.1 S-Schedule**

Each train schedule published by VRE on its web site and in printed brochures and posters includes a designation of “S” with some of the train numbers in the schedule. The “S” indicator is used to identify trains that will run when an “S” schedule is declared. Trains that do not have an “S” designator will not run when an “S” schedule is declared. Typically the dates when an S schedule will run are known well in advance, however it is possible for VRE to declare an “S” schedule immediately for the current day’s service under some conditions (such as snow storms). The GTFS feed will include an “S” version of the schedule when any S-Schedule dates exists, and those dates will be included in the calendar\_dates.txt file. When an S schedule is declared at the last minute, a new GTFS feed will be uploaded to the VRE web site and the calendar\_dates.txt file will include the current date as a date when the S version of the schedule is added (and the normal version of the schedule is removed).

### **4.2 Temporary Schedule**

A temporary schedule is a schedule VRE defines to override the normal schedule on certain days, such as holidays. The GTFS feed includes these schedules and uses calendar\_dates.txt to indicate when a temporary schedule overrides the current schedule. This is handled as indicated in the GTFS specification; a line will be included to add service for the temporary schedule on a given date and a second line in the file will be used to remove service for the normal schedule on that same date. If a temporary schedule spans more than one day, calendar\_dates.txt will include entries for each date the temporary schedule overrides the normal schedule.

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