



## Florida Department of Transportation Research

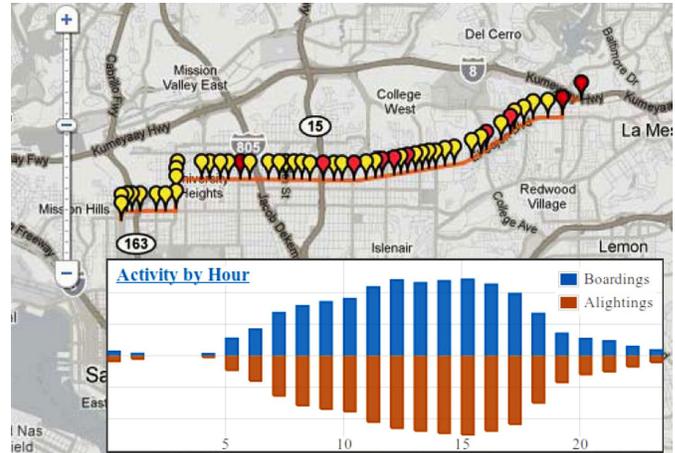
### Expanding the Google Transit Feed Specification to Support Operations and Planning BDK85 977-15

This project explores the use of Google's General Transit Feed Specification (GTFS) data for transit agency business applications to improve service delivery and transit operations. The GTFS is a data standard created by Google which allows integration of data from other sources with Google Maps, a well-known and widely used mapping service.

The Google Maps team accepts data from local transit agencies formatted according to the GTFS and incorporates them into Google Maps. Thus, agencies can create a robust, recognizable online trip planner for free. But the possibilities go well beyond extending Google Maps' data store; the GTFS's open architecture permits extension of the specification itself to include new types of information, leading to new products, such as applications that generate transit timetables, mobile transit planning applications, and trip planners that use text messaging.

Researchers from the University of South Florida investigated how the GTFS can be used to further assist transit agencies with business activities, such as service planning and operations. Researchers first conducted interviews in transit agencies to see how GTFS data was being used. Then, based on the feedback received, they created and deployed a prototype application that integrated GTFS data with automatic passenger count (APC) data.

Interviews were conducted in two transit agencies, the District Seven Office of the Florida Department of Transportation and the Office of Policy and Planning of the New York State Department of Transportation. The experiences of public transit agencies using the GTFS offered unique insights as to how GTFS data was created, managed, and used. The interviews provided examples of innovative solutions, generally serving the purpose of improving data through efficient systems and improving quality control over the data. The interviews also revealed that



*This collage shows elements from the prototype application developed as part of this project.*

experience with GTFS-based tools had created insight into possible new tools and corresponding wish lists.

To illustrate the power of expanding the GTFS, the project team developed a Web-based application for use by transit agencies. The application uses APC data to graphically display boardings and alightings along transit routes during specific times of day. The prototype was deployed on a test Web site using transit data for selected routes in San Diego, California. Users were able to choose a route and see its map and its stops. They were also able to select from a variety of graphs and tabulations displaying ridership statistics and characteristics aggregated in different ways, for example, by route, by stop, or by trip. For the majority of transit systems, which do not have highly integrated information systems or substantial IT resources, the prototype application can provide useful information for decision makers in adjusting and enhancing transit services to meet ridership demands.