HOW VTA IMPROVED RIDERSHIP DATA TO SECURE MORE FUNDING

Santa Clara Valley Transportation Authority

41.4 M
Riders per year

70
Bus lines

3
Light rail lines
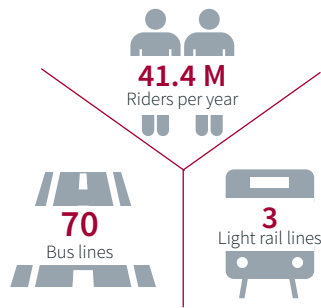
Industry

Fixed Route

Paratransit

Products

APC Gateway

Results

Gateway's load balancing algorithm was

98%

accurate when compared to manually checked data

Santa Clara Valley Transportation Authority (VTA) secured more funding for future transit projects simply by leveraging data to obtain accurate ridership numbers.

Background: VTA is an independent special district that provides sustainable, accessible, community-focused transportation options for the Santa Clara County. With a population of over 1.8 million, it's the most populous county in Northern California's Bay Area. VTA is responsible for countywide transportation planning, including congestion management, design and construction of specific highway, pedestrian, and bicycle improvement projects, as well as promotion of transit-oriented development.

Challenges: Before installing Trapeze APC Gateway, about one third of VTA's bus and light rail vehicles were equipped with third-party automatic passenger counters (APC). VTA used an in-house software tool, which was developed using Microsoft Access, to process ridership and passenger miles. This software was inefficient because there was no documentation of software code, no back-ups for the system administrator, it was hard to track un-sampled trips, and the data was not centralized as there were multiple access files and outdated queries.

In addition, the maintenance of this software was cumbersome and complicated. The software relied heavily "on users doing the right thing" because there were no standardized data validations. However, VTA needed accurate ridership numbers to secure funding and effectively plan its service delivery. Therefore, it became obvious to them that they needed an APC solution with proven algorithms to produce centralized and accurate data.

Solutions: VTA implemented Trapeze APC Gateway in 2010, after VTA staff and Trapeze specialists identified the critical features important to transit agencies. The APC Gateway is a web service that runs in the background waiting to process APC, farebox, or handheld ride/point check data. The system can be configured to collect data from any number of systems simultaneously. The gateway looks for information to process. It follows these steps:

1. Loading the data

2. Validating the data trying to match it to the schedule contained in FX

3. Load balancing of data by executing an algorithm that resolves negative loads due to inconsistencies in APC counts

4. Writing data into PLAN, Trapeze's ridership analysis and reporting system

PLAN generates final output and fully customizable reports that are essential for a number of decision-making processes—from executive decisions such as increasing service to securing federal funding. Any data that doesn't match the schedule or contains APC counts outside of user-defined thresholds are held for user review. This ensures that only valid data is loaded into PLAN.

Results: In addition to solving all of the issues with the previous process, the APC Gateway's load balancing algorithm was 98 percent accurate when compared to manually checked data. VTA staff can now focus on analyzing ridership data rather than collecting it.

As a requirement of National Transit Database (NTD) reporting, VTA is audited annually by an external financial auditor. The same auditor reviewed VTA's APC data, ridership and passenger miles procedures, and load balancing methodology. The audit concluded with favorable findings. Thus, VTA feels confident with the data and is able to provide accurate ridership and passenger miles numbers to its management, the Federal Transit Administration's NTD, and the public.

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