

**To:** Operations & Scheduling Committee

**Date:** 10/25/2024

**From:** Pranjal Dixit, Manager of Planning

**Reviewed by:** AMS

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**SUBJECT: Swiftly Software License Renewal**

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**Background:**

Over the past two years, the Planning and Scheduling staff has focused its efforts on improving service reliability, particularly as the ongoing operator shortage has limited the ability to restore service following the COVID pandemic. In addition, traffic patterns have continued to evolve, and congestion has increased significantly as the economy recovers from the pandemic. In order to respond quickly to these changing conditions, it has been critical for planning staff to closely track on-time performance and run times in order to make timely schedule adjustments.

Historically, staff has relied on Computer-Aided Dispatch / Automatic Vehicle Location (CAD/AVL) data from our buses to track performance. However, this data has limitations, including delayed uploads, data loss due to login errors, and service disruptions. Additionally, schedule adherence data was only available at a limited number of timepoints per route which lacked the detail needed to identify specific delay locations.

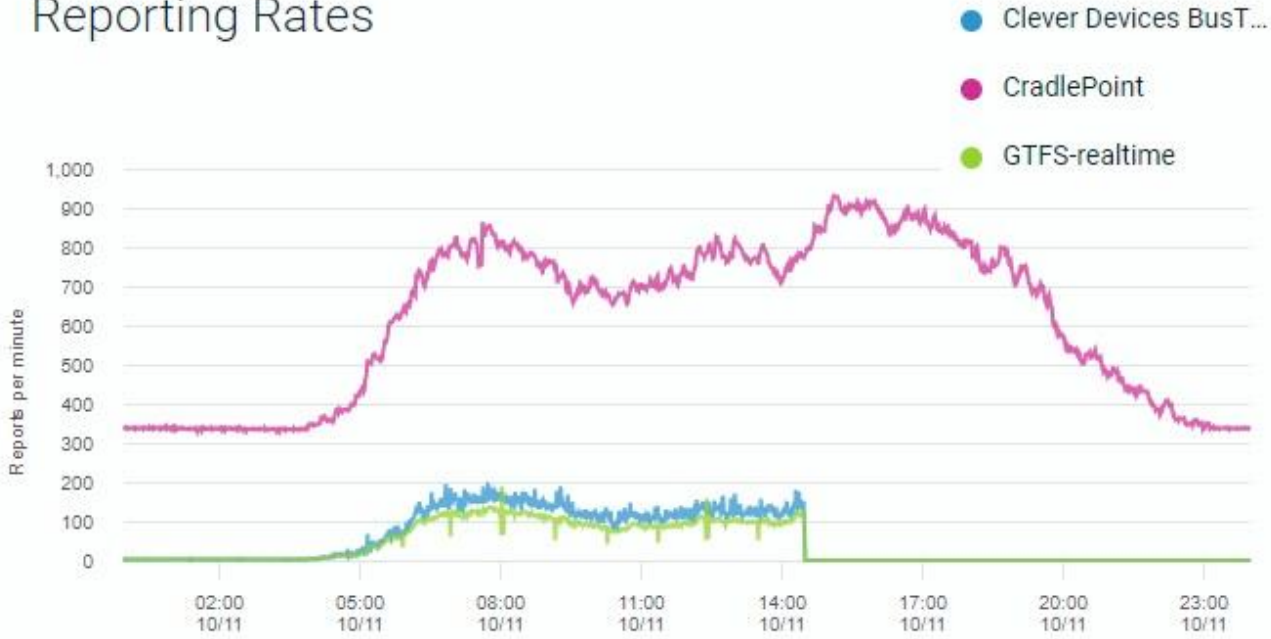
**Swiftly:**

Since Winter 2022, staff has been using Swiftly for on-time performance tracking and run time analysis. Swiftly is a cloud-based transit data platform that integrates with existing hardware on the buses to provide data analytics and visualizations.

Swiftly uses a combination of three data sources to track the real-time location of buses and calculate on-time performance and run times at every stop along each route. In addition to the General Transit Feed Specification (GTFS) realtime data feed and the BusTime application programming interface (API) coming from the existing Clever Devices system, the platform also collects vehicle location data from the CradlePoint routers already installed on the buses to help fill in gaps from the other two data sources. If an operator is not logged in correctly, the platform uses the GPS data from the routers to determine which route the vehicle is on. Swiftly's algorithm can also recognize if a bus has gone off-route and resumes tracking when the bus comes back on route, thereby collecting more accurate and complete data.

The chart and table below show a sample of reporting rates on October 11<sup>th</sup> for each of the three data sources being used by Swiftly. A higher reporting rate indicates a greater frequency of GPS pings transmitted to the system for processing. The data illustrates the high granularity of data provided by the CradlePoint routers compared to the other two sources used by the Clever Devices' reporting system.

# Reporting Rates



Data Source	Average Latency	Average Frequency
BusTime API	63.9 sec	25.3 sec
CradlePoint Routers	1.4 sec	2.9 sec
GTFS-Realtime	66.0 sec	31.8 sec

Data from October 11, 2024

Compared to the other data sources, the CradlePoint router data offers higher frequency and significantly lower latency. This means the data more accurately reflects real-time conditions. It also provides an additional level of redundancy, thereby increasing data reliability. For example, during a recent Clever Devices outage, Swiftly was able to rely on data from CradlePoint routers to continue providing on-time performance information.

**Application:**

In addition to having more accurate and complete data, Swiftly’s On-Time Performance and Run Times modules have provided staff with a powerful set of analytical tools to help improve the reliability of County Connection’s services. These tools have reduced the staff time required to analyze and develop schedule changes so staff can respond more quickly to performance issues and/or operator concerns.

Staff is currently using data from Swiftly for several current and upcoming projects. The Transit Signal Priority (TSP) project in partnership with the Contra Costa Transportation Authority (CCTA) and the Cities of Concord and Walnut Creek is using the data in its evaluation to measure the effectiveness of TSP technology in reducing delays and improving bus speed and reliability. In addition, County Connection recently kickstarted the Transit Corridor Study to identify bus priority improvements along four major corridors, and the analysis to determine the locations and causes for delays along those corridors will

rely heavily on data from Swiftly to report vehicle speeds. Finally, bus transit priority is one of the key strategies in MTC's Bay Area Transit Transformation Action Plan, and robust data on speed and reliability will be necessary to identify potential projects and pursue future funding opportunities.

Based on the platform's value to date and anticipated future needs, staff proposes a renewal of the two Swiftly modules for eight months. This will align the contract's cycle with another Swiftly contract for additional software modules that began in August 2024.

**Financial Implications:**

The cost for an eight-month renewal of the On-Time Performance and Run Times modules will not exceed \$58,000. Staff plans to use TDA funds to cover the cost of extension, which has been included in the FY 2024 budget.

**Recommendation:**

Staff recommends renewing the license for Swiftly for eight months at a cost not to exceed \$58,000.

**Action Requested:**

Staff requests that the O&S Committee forward the proposed eight-month contract renewal with Swiftly to the Board for approval.

**Attachments:**

None.