County Connection

INTER OFFICE MEMO

To: Board of Directors   **Date:** 07/08/2024

From: Pranjal Dixit, Manager of Planning   **Reviewed by**: _Rtf_

SUBJECT: Swiftly Modules

Background:

In the fall of 2022, agency staff embarked on a search for alternative solutions to improve data collection for on-time performance (OTP) tracking. The goal was to achieve this enhancement without requiring a complete overhaul of the existing Computer-Aided Dispatch/Automatic Vehicle Location (CAD/AVL) system. This led to exploring options provided by Swiftly, a cloud-based transit data platform.

Swiftly integrates seamlessly with existing hardware on buses, offering robust data analytics and visualizations. Staff implemented two key modules: On-Time Performance and Run Times. These modules provide a comprehensive picture of service delivery.

Swiftly:

Swiftly leverages a strategic combination of three data sources to track real-time bus location and calculate on-time performance and run times at every stop along each route – General Transit Feed Specification (GTFS) Realtime feed, BusTime Application Programming Interface (API) coming from the existing Clever Devices system, the platform collects vehicle location data from the CradlePoint routers already installed on the buses to help fill in gaps from the other two data sources.

In addition to higher frequency of data, the data from the routers has much lower latency (i.e., the delay between the data being generated and received), which means it more closely reflects real-time conditions. Swiftly's platform was able to provide 40% more stop-level data and recover 7% of data that would have otherwise been discarded due to missing operator login information and has been instrumental in analyzing system performance and developing targeted service changes for optimization.

Staff has recently begun testing additional functionalities within Swiftly. This ongoing exploration focused on identifying modules that can further enhance the capabilities of Operations, Customer Service teams as well as customers.

Modules:

Live Operations/Real-time Passenger Predictions
This module provides operations staff with a central hub for monitoring bus health and performance. Key features include:

- **Live Vehicle Tracking:** Updates every 5-10 seconds, giving dispatchers a clear picture of bus locations throughout the system.
- **Fleet Optimization:** Quickly identifies unassigned vehicles and facilitates efficient deployment based on real-time needs.

- **On-Time Performance Monitoring:** Enables proactive measures to address delays and improve overall schedule adherence.
- **Dynamic Stop Predictions:** Provides accurate arrival estimates for riders, even when buses are rerouted, allowing for better trip planning.
- **Enhanced Customer Service:** Equips call center staff with real-time data to effectively respond to customer inquiries about bus locations and arrival times.

A recent system outage highlighted the critical importance of this module. When traditional tracking methods were unavailable, temporary access to the module proved to be an essential resource. It allowed operations staff to maintain bus monitoring and customer service staff to continue assisting riders during the disruption.

GPS Playback

This module is a powerful tool that transforms raw location data into dynamic map visualization. It replays the historical movements of every vehicle in your transit network, allowing agency staff to rewind time and see the location of any bus during a specific period. This data can be further used for:

- **Vehicle Identification:** Block and trip IDs for easy route and schedule reference.
- **Driver Information:** Assign accountability and personalize performance reviews.
- **Performance Metrics:** Monitor adherence to schedules, headways, and speed limits to identify areas for improvement or recognize exemplary service.
- **Investigate Missed Stops:** Quickly investigate and resolve passenger complaints when passengers get passed up by buses.

Service Adjustments

This module empowers staff to adapt to unexpected situations and proactively manage service disruptions, all in real-time.

- **Dynamic Adjustments:** Instantly enact detours, modify departure times, add or cancel trips, close stops, and create temporary stops – all on the fly.
- **Real-Time Updates:** Changes made through Service Adjustments are reflected immediately in Swiftly's real-time predictions, keeping both customers and staff informed.

This is the first and only transit tool to share real-time detour information, including detour shapes and temporary stops, with third-party rider apps. This is achieved through Trip-Modifications, a cutting-edge update to the GTFS-rt TripUpdates specification. Additionally, our current partnership with Transit Royale allows us to leverage this innovative functionality and display real-time detour shapes directly within Transit's mobile app – empowering riders with the information they need, when they need it.

Financial Implications:

The one-year cost for the Live Operations/Real-time Passenger Predictions, GPS Playback and Service Adjustments modules is $181,000. Staff plans to use TDA funds to cover the cost, which has already been included in the FY 2025 budget.

Recommendation:

The O&S Committee and staff recommend acquiring the additional three modules from Swiftly for one year at a cost not to exceed $181,000.

Action Requested:

The O&S Committee and staff request that the Board adopt Resolution No. 2025-01 approving a one-year contract renewal with Swiftly.

Attachments:

Resolution no. 2025-01

RESOLUTION NO. 2025-01

BOARD OF DIRECTORS
CENTRAL CONTRA COSTA TRANSIT AUTHORITY
STATE OF CALIFORNIA

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AUTHORIZING THE GENERAL MANAGER TO EXECUTE A NEW CONTRACT WITH
SWIFTLY, INC. FOR LIVE OPERATIONS/REAL-TIME PASSENGER PREDICTIONS, GPS
PLAYBACK, AND SERVICE ADJUSTMENTS SOFTWARE MODULES FOR A ONE-YEAR
TERM FOR AN AMOUNT NOT TO EXCEED $181,000

     WHEREAS, the County of Contra Costa and the Cities of Clayton, Concord, the Town of Danville, Lafayette, Martinez, the Town of Moraga, Orinda, Pleasant Hill, San Ramon and Walnut Creek (Member Jurisdictions) have formed the Central Contra Costa Transit Authority (CCCTA), a joint exercise of powers agency created under California Government Code Section 6500 et seq., for the joint exercise of certain powers to provide coordinated and integrated public transportation services within the area of its Member Jurisdictions and certain unincorporated portions of Contra Costa County;

     WHEREAS, on-time performance and run time data is critical for staff to make timely adjustments to CCCTA's bus schedules;

     WHEREAS, obtaining useful and timely data from CCCTA's Clever Devices Computer-Aided Dispatch/Automatic Vehicle Location (CAD/AVL) system installed on the buses has been an ongoing challenge;

     WHEREAS, in the fall of 2022, staff began exploring alternative options to improve data collection for on-time performance tracking without performing an entire overhaul of the existing CAD/AVL system;

     WHEREAS, Swiftly, Inc. (Swiftly) is a cloud-based transit data platform that integrates with existing hardware on the buses to provide data analytics and visualizations;

     WHEREAS, in December 2022, CCCTA entered into a sole source contract with Swiftly for an initial one-year term for $98,875 to test out Swiftly's On-Time Performance and Run Times software modules;

     WHEREAS, on November 16, 2023 by Resolution No. 2024-08, CCCTA renewed its contract with Swiftly for On-Time Performance, Run Times, and Speed Maps software modules;

     WHEREAS, over the years, Swiftly's modules have provided staff with a powerful set of analytical tools that have reduced staff time required to analyze and develop schedule changes so staff can respond more quickly to performance issues and/or operator concerns;

     WHEREAS, staff recently began testing additional functionalities within Swiftly, focused on identifying modules that can further enhance the capabilities of the Operations and Customer Service teams; and

     WHEREAS, staff recommends and the Operations and Scheduling Committee concurs that the

Board of Directors authorize the General Manager to execute a new sole source contract with Swiftly for Live Operations/Real-time Passenger Predictions, GPS Playback, and Service Adjustments software modules for a one-year term for an amount not to exceed $181,000.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Central Contra Costa Transit Authority authorizes the General Manager to execute a contract with Swiftly for Live Operations/Real-time Passenger Predictions, GPS Playback, and Service Adjustments software modules for a one-year term for an amount not to exceed $181,000; and

BE IT FURTHER RESOLVED that the General Manager or designee is authorized to take any other actions necessary to give effect to this resolution.

Regularly passed and adopted this 18th day of July, 2024 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

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Don Tatzin, Chair, Board of Directors

ATTEST:

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Lathina Hill, Clerk to the Board