

INTER OFFICE MEMO

To: Operations & Scheduling Committee

Date: 06/27/2023

From: Pranjal Dixit, Manager of Planning

Reviewed by: MR

SUBJECT: On-Time Performance Update

Background:

County Connection adopted on-time performance standards based on types of service as a part of the 2016 Short Range Transit Plan. The standards outlined are as follows:

- Regular service (Weekday) – 87%
- Select service (Schools) – 80%
- Express service – 75%
- Weekend service – 80%

The on-time performance window that was outlined in the Short Range Transit Plan FY 2011-12 through FY 2020-21 was based on the departure time from timepoints, and buses up to five minutes late would be considered on-time.

At the beginning of fiscal year 2023, staff implemented changes to the methodology of on-time performance calculations to factor in early departures. This was done to better track the on-time performance of routes and develop service changes to improve reliability for customers.

Given the rapid change in traffic patterns coming out of the pandemic, it has been critical for planning staff to be able to track on-time performance and running times more closely in real-time to guide service changes. Historically, on-time performance has been recorded using the Clever Devices CAD/AVL (Computer-Aided Dispatch/Automatic Vehicle Location) system installed on the buses. However, the data from this system is only uploaded at the end of the day after the vehicle returns to the yard, and it takes an additional 3-4 days before the data is processed for tracking on-time performance.

The existing CAD/AVL system also relies on planned route alignments to calculate the location of the buses, which results in entire datasets being discarded when routes run on detour. Data is also not collected if an operator is not correctly logged in, which can occur for various reasons such as the system configuration on the vehicle not being up-to-date. Additionally, on-time performance and running times are only available for timepoint stops.

Swiftly:

Last fall, staff began exploring alternative options that would improve data collection for on-time performance tracking without requiring an entire overhaul of the existing CAD/AVL system. Swiftly is a cloud-based transit data platform that is able to integrate with existing hardware to provide data

analytics and visualizations, and staff started using their On-Time Performance and Run Time modules in December 2022. The modules have provided staff with a powerful set of tools to improve the reliability of County Connection’s services.

Swiftly uses a combination of vehicle location data from the existing CradlePoint routers installed on buses along with the GTFS (General Transit Feed Specification) Realtime feed coming from the existing Clever Devices system to accurately track the real-time location of buses and then to calculate on-time performance at every stop along the route. 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 getting better quality data.

The On-Time Performance module tracks the actual arrival and departure times of vehicles against their scheduled times and provides staff with insights into where and when their services are most likely to be delayed in real-time (see Figure 1).

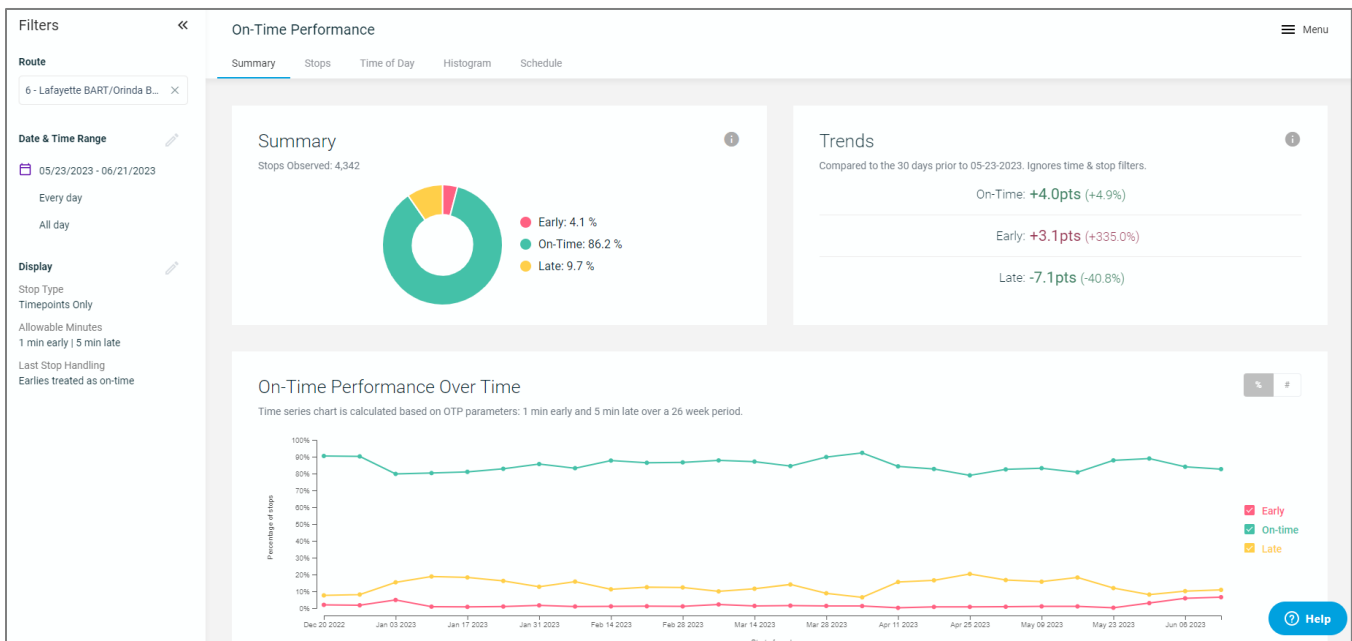


Figure 1: On-Time Performance Module

The Run Time module compares the actual run times of vehicles against their scheduled run times, helping staff identify routes that are running too long or too short (see Figure 2). The module then provides suggestions on runtime adjustments to improve the on-time performance of routes (see Figure 3).

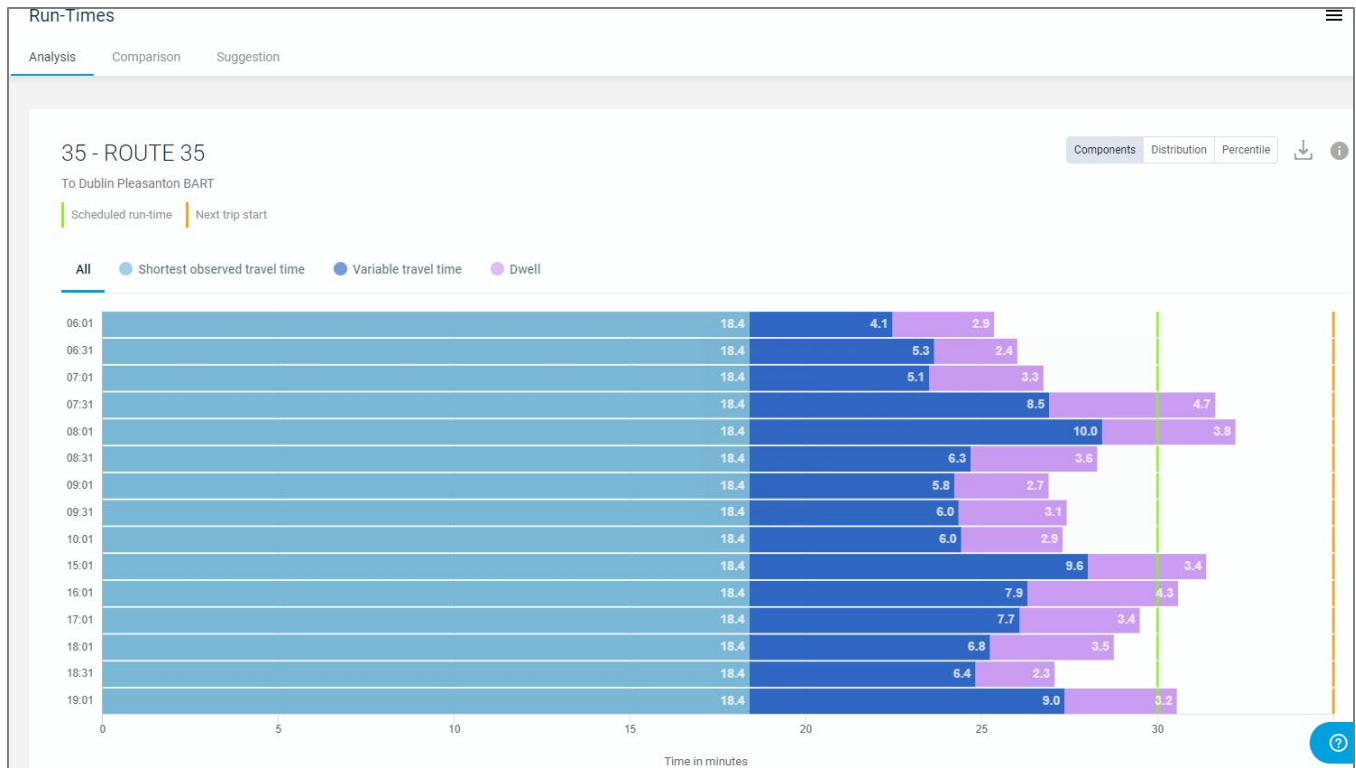


Figure 2: Runtime Module - Analysis

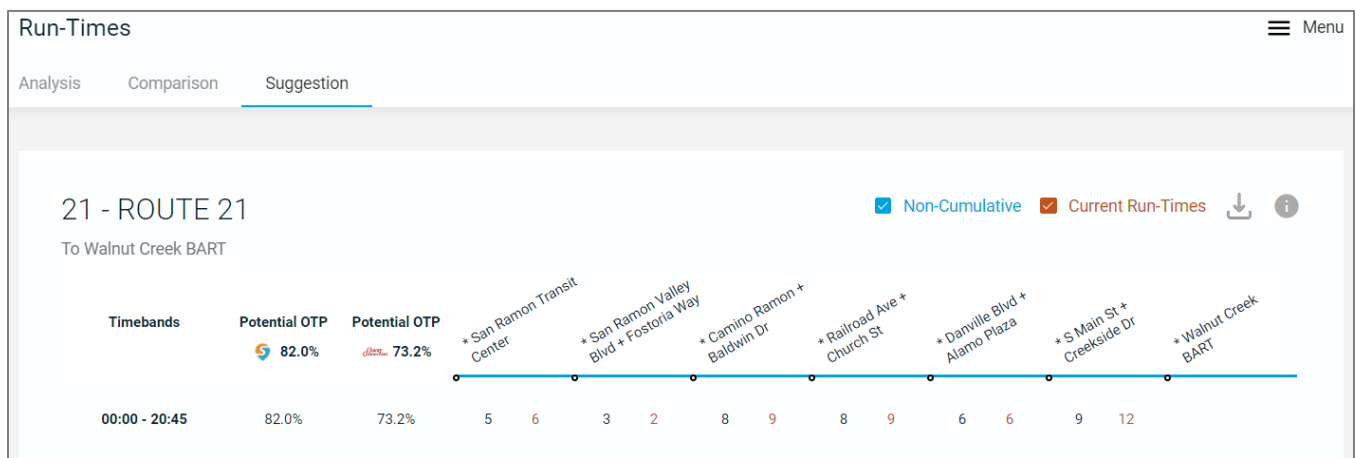


Figure 3: Runtime Module - Suggestion

Together, these modules provide staff with a comprehensive view of operations, allowing them to make informed decisions about how to improve reliability and efficiency. Over the last six months, staff has used data from Swifly to analyze on-time performance and will be implementing runtime changes on the following 17 routes with the Fall Bid:

- Regular Service – Routes 21 and 35 with an average on-time performance of 81%
- Express Service – Route 98X with an average on-time performance of 78%

- Select Service – Routes 601, 602, 606, 611, 612, 616, 619, 622, 623, 626, 635 with an average on-time performance of 59%
- Weekend Service – Routes 321 and 335 with an average on-time performance of 74%

Staff will continue to monitor performance and provide the Committee with an update on the effectiveness of the on-time performance-related changes later this year.

Financial Implications:

None at this time. An initial one-year license for Swiftly was funded using an existing grant. Staff will evaluate the effectiveness of the Swiftly platform to determine its utility moving forward and whether there are grant opportunities for future funding.

Recommendation:

None, for information only.

Action Requested:

None, for information only.

Attachments:

None