

ALAMEDA-CONTRA COSTA TRANSIT DISTRICT



STAFF REPORT

MEETING DATE: 8/10/2022

Staff Report No. 22-433

TO: AC Transit Board of Directors
FROM: Michael A. Hursh, General Manager
SUBJECT: Service Operated Public KPI

BRIEFING ITEM

AGENDA PLANNING REQUEST: ☒

RECOMMENDED ACTION(S):

Consider receiving a briefing on Service Operated Public Key Performance Indicators (KPI). [Requested by Director Peeples - 2/12/2020, Director Walsh - 3/9/2022, and Director Shaw - 5/11/2022]

STRATEGIC IMPORTANCE:

Goal - Safe and Secure Operations
Initiative - Service Quality

The Service Operated KPI provides operating service performance transparency to the public and guides the District as a marker for service quality improvements.

BUDGETARY/FISCAL IMPACT:

There is no budgetary or fiscal impacts directly related to this report.

BACKGROUND/RATIONALE:

The Service Operated Key Performance Indicators (SO KPI) will be available to the public on August 08, 2022, at <https://kpi.actransit.org/>. The SO KPI reports the total percentage of actual Service Operated Trips measured against the Scheduled Trips filtered by month, date range, and division. Provided below are the list of definitions that references the data origin and field type related to the SO KPI.

Definitions

HASTUS Daily: Scheduling system for vehicle and operator assignments.

CAD/AVL: Computer-Aided Dispatch / Automatic Vehicle Location system.

OCC: Operation Control Center.

Trip: A trip is the smallest unit of service operation.

Block: A block is unit work for a vehicle with multiple trips of one or many operators.

OTS: Legacy time scheduling timekeeping system on HP3000.

TIS: Legacy vehicle assignment system on HP3000.

HP3000: Legacy mainframe IT infrastructure that hosted various legacy enterprise applications, since

1990s. It ran timekeeping and vehicle assignments enterprise applications until October 2021.

The SO KPI is a product of teamwork between the Innovation and Technology, Business Sciences and Transportation Departments. Many systems and data challenges were discovered and resolved in the process. Business processes between division staff and OCC were automated and significantly improved.

The switch to using the new HASTUS Daily system and the new CAD/AVL system allowed the decommissioning of the obsolete OTS and TIS enterprise applications hosted on HP3000 mainframe computer in 2021. These new system solutions enriched the data environments while improving the reporting data on other critical district KPIs such as log-on rate, on-time performance, and ridership. Another improvement came with increased frequency of data updates between vehicles and CAD/AVL system, from every 60 seconds to every 15 seconds. Finally, switching blocks to trips fixed data gaps and led to substantial analytic improvements, eliminating the need for OCC staff to count trips for KPIs manually.

Along with all this, further data validation and data collection and SO KPI methodology improvements are still underway.

Operational, Data, and Reporting Challenges

The 3-year transition period to the new CAD/AVL and OTS/TIS Daily systems created many challenges in resolving data mismatches between the old OTS block data and the new CAD/AVL system trip data. Trip tracking in incidents and data collection for Trips Not Operated were enhanced and resolved. The ongoing use of the legacy OTS Block based methodology constrained the district with the following challenges:

1. Data quality challenges were due to differences in accuracy between CAD/AVL and HASTUS Daily systems, especially when it came to Blocks/Runs and Routes that were not operated without notifying OCC. This challenge is partly resolved with the replacement of OTS/TIS with HASTUS Daily. Further improvement will come with the CAD/AVL and HASTUS Bi-directional interface.
2. Only division staff would notify OCC of incidents to log in to their Incident Management System. OCC would then log the event, manually calculating the number of missed revenue trips and revenue lost time. This challenge has been resolved with a customization of CAD/AVL Incident Management System to automatically capture impacted trip numbers when OCC cancellations occur.
3. The Missed Trips report was updated to use automated Missed Block Operator Log-on events along with trips not operated or removed from service by OCC. Exporting and aligning this data was cumbersome: CAD/AVL data exports were limited to only 20% of total incidents a month, including detours; there is no base trip number to align; route and date were used but are not detailed enough for quality data. The challenge has been addressed by adding AC Transit Trips Not Operated custom data collection and its report into the CAD/AVL Report system along with automation of dataset into Enterprise Database and as data models for business intelligence consumption.
4. Training-related challenges were identified related to operator log-on. Late or Missed Log-ons have improved but are expected to remain an issue. The planned Secure Bus Log-on and Daily Operation enhancements should address log-on issues, further improving data quality. A system update for CAD/AVL is planned to address AC Transit log-on customizations along with staff workshops.
5. Visibility on the individual trip dates was also a problem with the CAD/AVL Incident Management Tool not recording needed data for analyses of consecutive trips lost. This challenge has been addressed with customization of CAD/AVL Incident Management System and trips tracking against scheduling

system in the Enterprise Database data warehouse

ADVANTAGES/DISADVANTAGES:

This report does not recommend a course of action with notable advantages or disadvantages.

ALTERNATIVES ANALYSIS:

This report does not recommend an alternative analysis.

PRIOR RELEVANT BOARD ACTION/POLICIES:

None

ATTACHMENTS:

1. Service Operated KPI Screen Shots

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