

STAFF REPORT

SUBJECT: On-Time Performance Improvement Action Plan
FROM: Christy Wegener, Director of Planning and Communications
DATE: September 28, 2015

Action Requested

None – Information only

Background

This staff report is an update of efforts to improve On-Time Performance (OTP)

Discussion

In April 2015, staff presented an OTP Action Plan to the Board (Attachment 1), which included an outline of actions to immediately improve OTP. Since that time, several adjustments have been made to route schedules and alignments, as well as improvements to the software that monitors OTP.

- 1) Fine tuning of software: Over the past five months, staff has worked to adjust the Transit Master software so that it more accurately records OTP. This has included adjusting the stop interval distances, re-geocoding stops, and adjusting the arrival and departure zones for each stop. This process typically takes several attempts in order to achieve the desired results. This involves inputting the data into the system, exporting it to the database, pushing it out to the buses, and finally analyzing the data over several days.
- 2) Improve the OTP of the Route 10 and the Rapid by 3%: Adjustments have been made to the Route 10 afternoon schedule to better time with the bell at Amador High School. Additional schedule adjustments were made to early morning trips as part of the February 2015 sign-up. However, achieving a 3% improvement in OTP has not been attained at this point. Improvement in OTP for these routes has been negligible.
- 3) Identify the top two worst performing routes (Route 3 and Route 54) and make adjustments to schedules to improve respective OTP by 10%. OTP-related schedule and alignment adjustments have been made to Route 3 as part of the June 2015, and August 2015 signups, and to Route 54 as part of the June 2015 signup. Similarly, Route 70X received OTP-related routing- and schedule adjustments with the August

2015 signup. The following table represents OTP before and after the adjustments were made:

Route	Action Taken	Implementation Date	Pre-OTP	Post-OTP	% Difference
3	Runtime adjustments	June 13, 2015	66.2%	67.2%	+1.0%
3	Runtime adjustments	August 22, 2015	60.6%	66.8%	+6.2%
54	Runtime adjustments	June 13, 2015	65.7%	74.7%	+9.0%
70X	Route was modified to only serve the Walnut Creek BART station once on each trip.	August 22, 2015	52.3%	70.4%	+18.1%

4) Working with the contractor, work with Operations staff on operator re-training, as needed: MV has been diligently tracking OTP by operator and retraining/counseling operators on an as-needed basis.

Next Steps

Staff will continue to work on improving OTP until the COA recommendations can be implemented.

Attachments:

1. March 2015 On-Time Performance Action Plan Staff Report

LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY

STAFF REPORT

SUBJECT: On-Time Performance Improvement Action Plan

FROM: Christy Wegener, Director of Planning and Communications

DATE: March 23, 2015

Action Requested

None – Information only

Background

Since at least 2009, On-Time Performance percentage at Wheels has hovered in the low 80s, falling well below the Board's goal of 95%. Staff is working hard to improve the metric, both in the short term through minor adjustments to route schedules, and long term through the implementation of the Comprehensive Operational Analysis (COA) recommendations, which will take place in mid-2016. The purpose of this staff report is to introduce to the Board the short term On-Time Performance Improvement Action Plan.

Discussion

On-Time Performance (OTP) is a measure of a transit system's ability to keep to its published schedule. OTP is viewed as a measure of reliability, which is typically a major factor in an individual's decision as to whether or not to utilize public transportation. At LAVTA, a trip/route is considered on-time if the bus arrives at the pre-designated time point within one minute early to five minutes late of the scheduled time. There are typically five to seven time points for every route, one at the beginning and at the end of each trip, and a few scattered along the route. For a given month, over 75,000 time points are measured in the overall OTP calculation for the Wheels system.

Achieving 95% OTP

Achieving 95% OTP would mean that the buses depart from all time points (beginning, middle and end of the route) within -1 to 5 minutes of the scheduled time. For most passengers, departing the first time point and arriving at the last time point on time are the most important time points to meet to ensure connections with trains or other buses. To ensure 95% along the full route would require extra time in the schedule to account for traffic, passenger boardings, bicycle boardings, wheelchairs, strollers/carts, etc. on every trip. The extra slack time would mean the bus would periodically have to hold at mid-route time points until it has caught up to the schedule. Having a bus hold at a time point would more than likely have a negative impact on the riders, and can be viewed as inefficient service delivery. Fine-tuning running time at a very granular level, especially to account for major

fluctuations in the peak period running times, with constant evaluation and re-adjustment, is a better way to improve OTP along the route rather than building in extra padding.

Adding recovery time to the end of the line is another way to ensure an on-time departure for routes. However, some of the most schedule-challenged routes (70X/XV, for example, operating on the highly unpredictable I-680) operate as a loop. To build in additional recovery time at the northbound terminus in Pleasant Hill would mean the bus could potentially have to hold there for 15+ minutes every trip. Since some riders board at Walnut Creek, they would be onboard the bus during the recovery time when the recovery time is not needed.

When possible, LAVTA adds at least 10% recovery time into each trip (industry standard), ensuring in most cases that the next trip begins on time. When looking at LAVTA start times for trips as a measure for OTP in February, for example, LAVTA achieves an approximate 90% OTP.

Factors that influence On-Time Performance

Traffic: Traffic has a major influence on a route's ability to stay on schedule, especially growing traffic or incidents on major roadways such as I-580 and I-680. Traffic along secondary roadways in the Tri-Valley has also increased and changed patterns over the last several years, and without a corresponding adjustment in running times within the schedule, many routes are and will be challenged to stay on time.

Running time: Many of the routes' running times have remained constant over the years or have only been slightly adjusted when segment-level issues have been identified. Past scheduling practices have focused maintaining the routes' schedule consistency (maintaining a "pulse" schedule where routes arrive/depart at the same time at key locations to facilitate transfers between routes, and maintaining consistent headways/frequencies of buses so that routes operate at 15, 20, 30 or 60 minute intervals), which has affected the OTP metric. Reassessing a full routes' running time and essentially starting from scratch on developing running times hasn't been done for some time, with the exception of the Rapid in 2011. Because of the change in congestion in the Tri-Valley, a full schedule reassessment of every route is overdue, especially in order to account for variability in running time by time of day. Additionally, the connectivity and transferability between routes and trains at key transfer locations needs to be examined and potentially modified.

Transfer activity (ACE, BART and other buses): Passengers transferring from ACE or BART to the bus may occasionally request the bus to hold to meet late-arriving trains. Current LAVTA policy is to allow for a 3-minute hold at transfer hubs when a passengers requests it. A three-minute hold at a route's departure time will have a spillover effect on its ability to remain on-time throughout the remainder of the trip. Additionally, when ACE trains run seriously late for any particular reason, Wheels buses (route 53 and/or 54) hold until the train arrives.

Passenger activity: Passengers boarding will have an impact on OTP, especially if passengers have carts or strollers, which many passengers do. Some of the 40' buses have cart/stroller areas that enable a passenger to have a seat on the bus without having to fold their stroller or cart; however, if that area is occupied, or there is a smaller bus assigned to the route, the passenger has to fold their stroller or cart which can take a significant amount of time. Staff is currently looking into the impact of having unfolded strollers or carts in the wheelchair area, when available.

Length of the Route: The longer the route, the more difficult the route's ability to remain on time. Traffic, traffic lights and passenger boarding along a lengthy route will have a cascading effect on the OTP. The shorter the route, especially the routes that remain off major arterials, historically the better the OTP. Route 70, which travels from the Dublin/Pleasanton BART Station to Walnut Creek has very low OTP; it is 20 miles long each way and often gets stuck in unpredictable I-680 traffic. The Rapid and Route 10 are also very long routes and have OTP in the low-80s.

Steps Taken to Date

Throughout FY2015, staff has adjusted schedules to improve OTP and connectivity within the Wheels network. The following table illustrates the actions taken to address OTP:

Date	Route	Action
August 2014	3	Modified alignment to utilize I-680 for PM trips to save running time
August 2014	15	Modified alignment in the Walmart area to save running time
August 2014	R	Adjusted PM peak runtimes within west Dublin segment
August 2014	70	Adjusted runtimes between Dublin and Pleasant Hill
August 2014	503	Added mid-route recovery (time cushion) point
August 2014	604	Adjusted AM and PM running time
August 2014	various	Adjusted certain specific deadhead times to improve start times on select routes/trips
February 2015	3	Re-blocked #303 so that Route 3 starts on time
February 2015	12	Adjusted eastbound PM peak runtimes in Murrieta/Stanley area
February 2015	15	Adjusted PM peak runtimes in Springtown area
February 2015	R	Adjusted eastbound runtimes between Dublin and Livermore

In addition, staff worked diligently to repair the two intersection queue jumps to improve the Rapid's on-time performance. The queue jumps were back in working order in January/February 2015 and staff is in the process of determining how their operation has affected the Rapid's OTP.

Action Plan

To continue to address the OTP and move the dial in a positive direction while the COA recommendations are being created and implemented, staff proposes the following:

- 1) Agency will complete the installation and fine tuning of critical software that is needed to monitor time points on all routes within the next three months. Staff will notify the Board when the software installation and fine tuning is complete and demonstrate to the Projects & Services Committee the effectiveness of the software in monitoring and fixing on-time performance within the system.
- 2) Improve the OTP of the Route 10 and the Rapid by 3%: Route 10 and the Rapid account for 45% of the total OTP time points (there are 75,000 time points reached per month in the system). Current average OTP for these routes is 80-81%. The agency will improve the OTP of these two routes by working with operators and fine-tuning the time points within the schedule. An improvement of 3% OTP equates to improving approximately 1,000 time points within these two routes each month from a late status to on-time.
- 3) Identify the top two worst performing routes (Route 3 and Route 54) and make adjustments to schedules to improve respective OTP by 10%. Schedule adjustments would be done without adding resources and would instead be a reflection of existing conditions.

Impact

The proposed changes will likely have a positive, modest impact on the calculation of OTP.

Next Steps

Unless otherwise directed by the Board, staff will implement the OTP Action Plan.