

LOS ANGELES FIRE DEPARTMENT



RALPH M. TERRAZAS
FIRE CHIEF

February 19, 2019

BOARD OF FIRE COMMISSIONERS
FILE NO. 19-016

TO: Board of Fire Commissioners

FROM: Ralph M. Terrazas, Fire Chief

SUBJECT: LAFD AUTOMATED VEHICLE LOCATION (AVL) STATUS REPORT

FINAL ACTION:	<input type="checkbox"/> Approved	<input type="checkbox"/> Approved w/Corrections	<input type="checkbox"/> Withdrawn
	<input type="checkbox"/> Denied	<input type="checkbox"/> Received & Filed	<input type="checkbox"/> Other

SUMMARY

As requested by the Board of Fire Commissioners on October 2, 2018, the Information Technology Bureau (ITB) is providing this report to update the Board on the status of Department's Automatic Vehicle Location (AVL) project.

RECOMMENDATION

That the Board:
Receive and file.

FISCAL IMPACT

There is no fiscal impact as this report for informational purposes only.

DISCUSSION

On April 17, 2018 the Department began using real-time unit location information received from the Automatic Vehicle Location (AVL) system. The focus of the initial rollout of this new technology was three-fold: first, was to assess the performance and accuracy of the AVL system infrastructure; second, was to assess the performance and accuracy of unit assignment using AVL to determine a unit's location at the time of dispatch; and third was to assess how AVL could be used to improve resource management.

The Department's assessment of the overall AVL system performance and infrastructure has been positive. The underlying mobile data radio network that carries the AVL information from the field to the Computer-Aided-Dispatch (CAD) system has performed well with the addition of the location reporting messages. Vehicles report updated location information on a regular time-distance interval that varies depending on the unit's status. The system currently processes approximately 190,000 AVL-location related messages per day with no measurable degradation to overall system

performance. As part of the ongoing monitoring of the system performance, ITB staff have performed periodic audits of the GPS location accuracy and device failure rate and found no significant anomalies in position reporting or failure rates.

Starting in March 2019, the Department will begin a limited, three-month field test of 'mobile broadband' in 65 vehicles located in each of the four geographic bureaus. One component of this test will be to compare GPS data received from the public cellular LTE network with data from the mobile data radio network and evaluate if/how the two systems can be used to further enhance the timeliness, accuracy and reliability of the unit's location information.

The Department's assessment of the use of AVL at time of dispatch has been positive. In April 2018, the CAD system was modified to one dispatch algorithm to use the unit's actual AVL-reported location instead of the unit's assigned fire station location as the unit's position when determining 'closest unit'. The purpose of limiting the initial use of AVL to only one algorithm was to evaluate the efficacy and accuracy of AVL-based dispatch with limited risk of systemic disruption to overall unit recommendation. Analysis of response time data for this algorithm suggests an approximately 16 second reduction in overall response time for this particular algorithm. In addition to lowering response times, AVL also helps to reducing the number of units assigned to a particular incident at time of dispatch. Since dispatch algorithms consider a unit's distance from an incident when determining what resources to assign, being more precise with a unit's actual location often results in sending fewer units. In 2019, the Department plans to continue to enhance this and additional algorithms to use AVL, based on ongoing analysis of response time and resource assignment data.

The Department's assessment of how AVL has improved resource management has also been very positive. As part of the initial AVL deployment, the CAD and MDC software were enhanced to provide dispatchers and crew members with alerts when units were moving in an incorrect status. In addition to the alerts, dispatchers were provided with a new, enhanced map that shows more accurate vehicle locations. The most significant improvement noticed has been an overall increase in unit availability after transport. Post-AVL implementation, there was a slight increase in overall HSP times (time spent at the hospital) and a marked decrease in hospital-related NAV (not available) times, resulting in a net-positive affect on resource availability. This improvement can be attributed mostly to more accurate status reporting and improved awareness prompted by AVL-based messages to dispatchers and crew members when units are moving, resulting in resources becoming available in the system sooner. Improvements to the map also help the dispatcher's increased situational awareness enabling them to make better resource assignment and movement decisions. The Department continues to evaluate these operational impacts and plans to make additional enhancements to the CAD map based on user feedback and evaluate additional resource status' that might benefit from AVL-prompts, such as en-route (ENR) and on-scene (ONS).

In addition to the three primary objectives listed above, progress on the AVL project has also enabled advancement of other related areas. The Department has deployed mobile iOS version of the MDC designed specifically to support the cycle-team

paramedics that operate at Los Angeles International Airport (LAX). These devices use the AVL system to alert the cycle-teams of calls on airport property and within their response area and provide them with enhanced situational awareness while operating at the airport. In 2019, the Department plans to continue the selected deployment of these devices to other specialized units such as Air Operations.

In December 2018, the Department began field testing a new mobile iOS application that uses the AVL data called mCAD in order to provide members in the field with improved situational awareness. The primary focus of mCAD is to reduce phone and radio traffic to Metro Fire Communications by providing members in the field with real-time, accurate information. Members can use the mCAD app to see incident and unit details in real-time, making it easier for them to answer questions and make decisions. In 2019, the Department plans to continue to enhance the mCAD app and expand the rollout to a broader user base.

Board report prepared by Scott B. Porter, Chief Information Officer.