LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY

STAFF REPORT

SUBJECT: Summer of Pilots - Evaluation

FROM: Mike Tobin, Director of Operations & Planning
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DATE: August 25, 2025

Action Requested
Staff recommend that the Projects and Services Committee receive an update on summer technology pilot projects.

Background
LAVTA is committed to leveraging innovative technology to enhance operations, safety and improve service delivery. This summer, staff partnered with multiple technology vendors to pilot new solutions aimed at increasing efficiency, reliability, and the overall rider experience.

Discussion

MirrorLESS System
LAVTA partnered with SafeFleet to pilot a mirrorless system in which cameras were installed on the exterior of the bus and two screens were installed on the interior of the bus. During the current phase of the pilot, the rearview mirrors will not be removed, as staff want to get an idea of how the mirrorless system compares to the traditional rearview mirrors. However, if the mirrorless system were to be implemented fleet-wide, the benefits would include increased fuel efficiency due to reduced drag, fewer collisions between the protruding rearview mirrors and other objects (e.g., tree branches, signposts, etc.), and safer driving due to the blind spot camera view.

Picture 1: The mirrorless system shown side-by-side next to the traditional rearview mirror.

TSI Video

LAVTA also partnered with TSI Video to pilot their camera system on two buses. LAVTA's current system is hard drive based (as opposed to cloud based) and is becoming increasingly outdated, which causes several operational challenges. For example, requested videos will occasionally fail to download, which then requires the bus to be brought back to the yard and staff to manually retrieve the video. Also, videos will fail to play on certain computers, which prevents timely resolution of customer complaints and investigation of accidents and incidents. TSI's modern camera system would address these issues and introduce new benefits, such as the ability to download videos via cellular connection while the bus is driving in service, rather than being restricted to Wi-Fi downloads at the yard, as well as live look-in of buses.

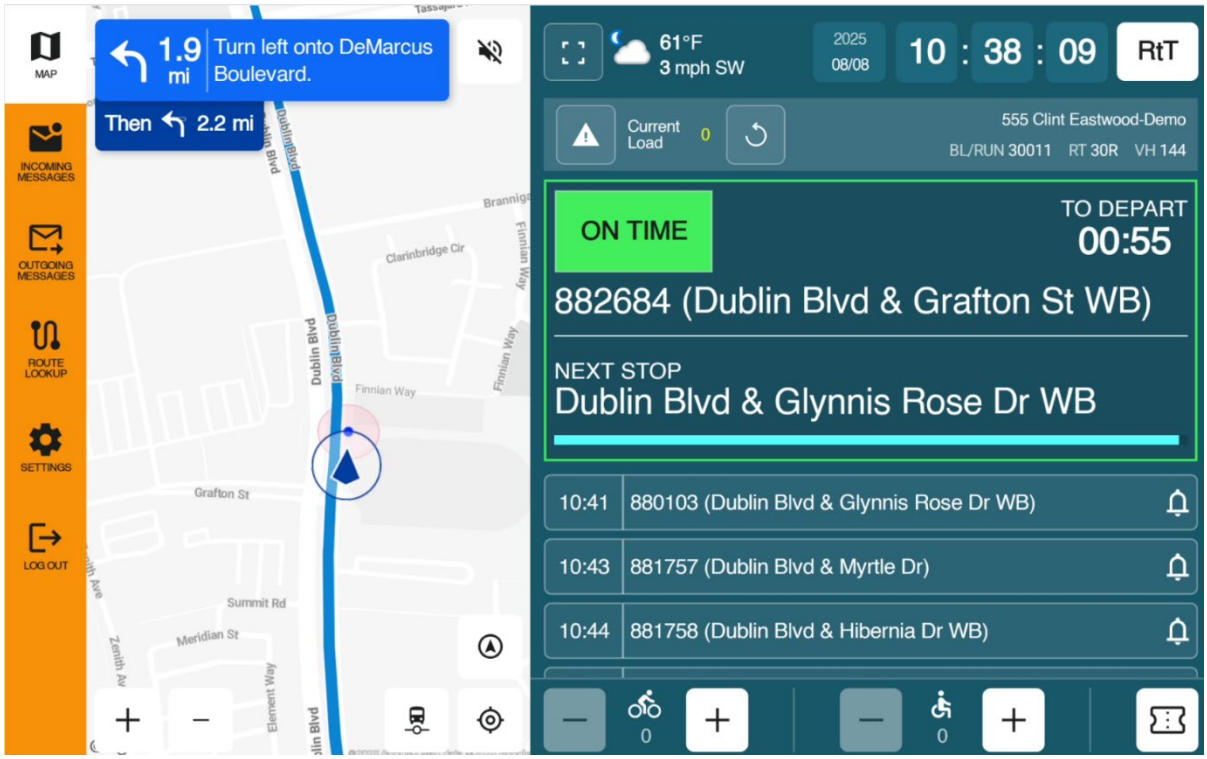
Picture 2: TSI's 360° camera is comprised of multiple cameras contained in one unit, which allows video to be viewed without the "fisheye" effect.

TSL Tech CAD/AVL Solution

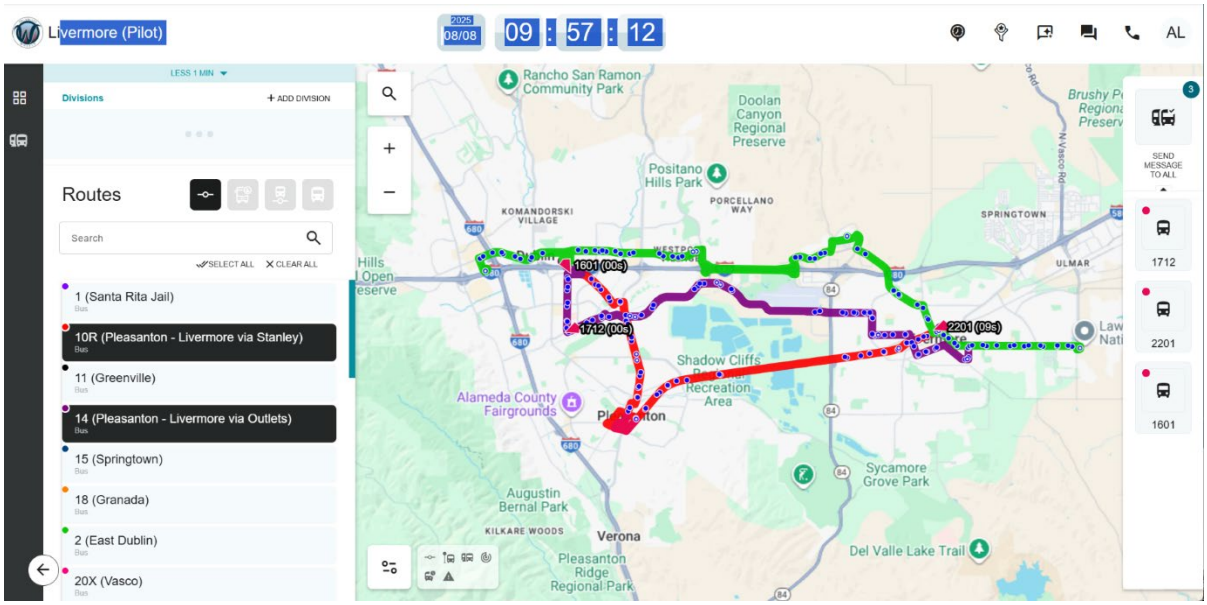
This summer, LAVTA partnered with Transit-Systems, LLC (TSL) to pilot their computer-aided dispatch/automated vehicle location (CAD/AVL) system on three buses. CAD/AVL is a core technology for the agency, enabling dispatchers to communicate with drivers, track bus locations in real time, share live arrival information with passengers, collect and store operational data for reporting, and perform other essential functions.

As technology continues to evolve, LAVTA actively evaluates new tools to improve efficiency, reliability, and user experience. TSL's solution stands out for several reasons: turn-by-turn navigation and VoIP communication are built directly into the application, and the hardware is streamlined—lowering both upfront and ongoing maintenance costs. Instead

of relying on on-premises infrastructure, the system uses vehicle-mounted tablets connected via cellular service to a cloud-hosted platform. This approach simplifies deployment and improves flexibility. Additionally, the software's interface is more intuitive for both dispatchers and drivers, reducing training time and improving day-to-day usability.



Picture 3: This screenshot shows the view that a driver of Route 30R might see when they're using the TSL system.



Picture 4: This screenshot shows the dispatcher's view with Routes 10R, 30R, and 14 selected.

Next Steps
Although further evaluation will be required, initial feedback on the pilots has been encouraging. Operators have responded positively to the TSL system's turn-by-turn navigation, which has been particularly valuable on school tripper routes that can be confusing due to routing through residential neighborhoods. This feature not only reduces missed turns but also helps new or relief drivers navigate unfamiliar segments of the system with greater ease and confidence.

Feedback on the mirrorless camera pilot has been more mixed, with drivers noting both advantages and areas of concern. These perspectives will be carefully reviewed as staff considers full scale or even limited implementation of this technology. Staff is also evaluating how this technology may integrate with training and safety procedures before making any kind of recommendation.

The TSI camera system has received consistently strong feedback, particularly for its clarity and ease of use and ability to download video cellularly, which helps with the timely resolution of incidents. Based on this experience, staff is actively exploring incorporating this system into the procurement of new buses currently underway.

Over the coming months, staff will continue to gather feedback, analyze performance data, and compare pilot results with industry best practices. The outcomes will inform future procurement decisions and help shape a broader strategy for integrating new technology solutions into LAVTA's fleet and operations.

Recommendation
Staff recommend that the Projects and Services Committee receive an update on the summer technology pilot projects.