

# ALAMEDA-CONTRA COSTA TRANSIT DISTRICT



## STAFF REPORT

---

**MEETING DATE:** 6/14/2023

**Staff Report No. 23-242**

---

**TO:** AC Transit Board of Directors  
**FROM:** Michael A. Hursh, General Manager/Chief Executive Officer  
**SUBJECT:** Forward Facing Camera Bus Stop and Bus Lane Enforcement Technology

### ACTION ITEM

**AGENDA PLANNING REQUEST:** ☐

**RECOMMENDED ACTION(S):**

Consider authorizing the General Manager to execute a three-year sole source contract with Oakland-based Hayden AI to install Automated Bus Lane and Bus Stop Enforcement Technology on 100 buses.

Staff Contact:  
Ahsan Baig, Chief Information Officer  
Salvador Llamas, Chief Operating Officer

**STRATEGIC IMPORTANCE:**

Goal - Safe and Secure Operations  
Initiative - Service Quality

Automated Bus Lane and Bus Stop enforcement technology, which features forward-facing cameras and cloud-based software systems for end-to-end citation processing will reduce the number of vehicles illegally parked in District bus lanes and bus stops, thus improving on-time performance and increasing accessibility. This technology will improve operator and passenger safety, reduce scheduled travel time for coach operations in bus-only lanes, and increase efficiency during passenger boarding and alighting.

**BUDGETARY/FISCAL IMPACT:**

If this contract is awarded to Hayden AI, they will install, operate, and maintain the automated forward-facing camera technology on 100 buses, including hardware, software, cloud, and communication infrastructure, including all professional services required for a fully turn-key operational system. The cost-sharing contract between the District and Hayden AI will be the result of a public-private partnership, where the District will provide the buses and enable Hayden AI to deploy their turn-key technology solution. No upfront costs to the District are proposed, nor are any recurring costs anticipated once the system is operational on that sub-fleet; Hayden AI will receive a portion of the citation revenue generated, up to an amount equivalent to \$2,500 monthly per bus. In the event citation revenue does not equal or exceed this amount, the District will not be responsible for paying the difference.

**BACKGROUND/RATIONALE:**

In September of 2016, SB 1051 authorized AC Transit to enforce parking violations for vehicles parked in bus-only lanes by using video imaging evidence collected by automated forward-facing parking control devices on District-owned public transit vehicles. AB 917, which was co-sponsored by the District with the California Transportation Association (CTS), added use of forward-facing cameras for the enforcement of parking violations for vehicles parked at bus stops and extended this authority to all transit operators in the state of California until January 1, 2027. AB 917 does not create any new violations and establishes important data protection standards for agencies wishing to use this technology. Additionally, the statute ensures certain protocols are in place to assist low-income violators. On October 8, 2021, Governor Gavin Newsom signed Assembly Bill 917 (AB 917) into law.

Bus lane enforcement technology was initiated at the District when the Tempo BRT service went live on August 9, 2020; twenty-six (26) Tempo coaches are currently equipped with legacy Apollo Roadrunner lane enforcement technology. This initial technology uses a manual process to capture vehicles parked in bus-only lanes. It requires the Bus Operator to press a button whenever they see a vehicle parked in a bus-only lane to flag the video of a possible violation. Sheriff deputies then review videos that are flagged to verify the violation and manually generate each citation. This process is very time-consuming and has resulted in approximately 40-50 citations per month for the Tempo system. During calendar year 2022, the Sheriff's Department reviewed 14,195 bus lane enforcement videos and issued 568 citations. This manual process resulted in only 4% of the suspected violations resulting in citations.

In March 2022, Hayden AI conducted a proof of concept (POC) on two (2) Tempo buses. This POC studied the effectiveness of an automated technology solution that captures digital evidence of vehicles parked in bus lanes. Hayden AI captured 494 bus lane obstructions on one (1) bi-directional bus rapid transit route with two (2) buses in a 48-day period. The Hayden AI technology captured 9.3 potential violations per bus, per transit service day. The automated license plate reader (ALPR) successfully read 99.47% of captured license plates

In May 2022, the District released a Request For Information (Lane Enforcement Technology) to solicit information from manufacturers and implementors of Lane Enforcement Technology. The District was seeking additional information on the emerging area of enhanced video technology to fully understand the range of software applications and market improvements that would support the District's parking violation enforcement efforts. More importantly, the RFI helped identify technology that would improve the management of dedicated bus traffic lanes and bus stops, business processing efficiencies, and improve the on-time performance of bus service equipped with devices.

The RFI requested information about software technology, bus hardware, cloud infrastructure, technology security, product information, installation requirements, enforcement processes, and compliance with AB917 and SB1051. Information about autonomous system operation, the use of Artificial Intelligence (AI), and Big Data Analytics was also requested.

Three (3) vendors responded to the RFI and provided detailed information about their forward-facing camera technology solution, cloud infrastructure, security provisions, compliance with SB 1051 and AB 917, enforcement and citation processes, warranty information, and installation requirements. Since Hayden AI had demonstrated its ability to deliver on its proposal during the POC and further demonstrated its knowledge and expertise in its RFI response, the proposed solution of a sole source award to Hayden AI was supported. The contract will not require up-front District funding and will have an immediate impact on the District's

ability to reduce the number of parking violations in bus-only lanes and bus stops.

If the Board approves the award to Hayden AI, staff will post the requirements of this project and the essential needs of the District on its website pursuant to Board Policy 465 section IV, B, 2, b. Additionally, staff will need to follow the outline of Public Private Partnerships as required by Federal Regulations 72 part 2583 regarding the solicitation of applications.

**ADVANTAGES/DISADVANTAGES:**

Implementing automated forward-facing camera enforcement technology will reduce the number of unauthorized vehicles parked in bus-only lanes and bus stops. This will allow passengers to safely board and disembark from District coaches by ensuring that bus coaches can stop at the designated bus stop locations. Having unobstructed bus-only lanes and bus stops will improve scheduled arrival and departure times. Automated processes to identify violations and create citations will eliminate operator intervention and reduce required law enforcement time to identify and process violations.

There are no disadvantages to implementing forward-facing camera enforcement technology.

**ALTERNATIVES ANALYSIS:**

Staff considered using the present BRT Apollo Lane Enforcement technology in an expanded pilot. This alternative was not recommended for two reasons. The Apollo system requires the operator to line up the bus with the vehicle parked in the bus lane and push a button. This action is both a distraction and a safety issue for the operator. Additionally, the citation rate for the Apollo system during 2022 was approximately 4%. The result was hundreds of hours being used inefficiently by both District staff and Alameda County deputies.

Staff considered two other Lane Enforcement technologies proposed during the RFI phase. These alternate technologies did not meet all the technical requirements and they did not have all the features and options requested by the District.

Staff considered removing the Apollo System and not using Lane Enforcement technology. This alternative was not recommended because there is a need to reduce the safety issue created by unauthorized vehicles parked in bus lanes and bus stops.

**PRIOR RELEVANT BOARD ACTION/POLICIES:**

Staff Report 22-109  
Board Policy 465 - Procurement Policy  
Ordinance 18

**ATTACHMENTS:**

None

**Prepared by:**

Mike Carvalho, IT Manager of Cloud Infrastructure

**In Collaboration with:**

Cecil Blandon, Director of Maintenance

Michael Silk, Assistant Director of Procurement and Materials

**Approved/Reviewed by:**

Salvador Llamas, Chief Operating Officer

Ahsan Baig, Chief Information Officer

Jill A. Sprague, General Counsel/Chief Legal Officer

Chris Andrichak, Chief Financial Officer