INSPECTOR GENERAL
California Department of Transportation

Transportation Management Systems

Program Audit

October 6, 2022

Tony Tavares
Director
California Department of Transportation

Final Report – Transportation Management Systems Audit

The Independent Office of Audits and Investigations (IOAI) has completed its audit of the California Department of Transportation (Caltrans) performance outcomes for the transportation management system (TMS). Senate Bill 1 (Beall, Chapter 5, Statutes of 2017) requires 90 percent of TMS units to be in good condition by 2027.

Enclosed is the final report, which includes Caltrans' response to the draft report. The final audit report is a matter of public record and will be posted on IOAI's website.

A Corrective Action Plan (CAP) addressing the recommendations is due from Caltrans 60 days from receipt of this letter. The CAP should include milestones and target dates as applicable. Subsequent to the submission of the 60-day CAP, updated CAPs will be due every six months until all recommendations have been implemented. The CAP should be sent to IOAI.Admin@dot.ca.gov.

If you have any questions, please contact Juanita Baier, Audit Chief, at (916) 323-7111.

Sincerely,

Bryan Beyer, CIG
Inspector General

Gavin Newsom, Governor

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Tony Tavares
October 6, 2022

cc :   Toks Omishakin, Secretary, California State Transportation Agency
       Mitch Weiss, Executive Director, California Transportation Commission
       Cory Bins, Deputy Director, Maintenance and Operations
       David Man, Acting Chief, Division of Traffic Operations, Caltrans
       Sergio Aceves, Chief, Division of Maintenance, Caltrans
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P3010-0659

Contents

Terms Used in Report

Terms/Acronyms	Definition
Asset Management Guide	Transportation Management System Asset Management Guide
Caltrans	California Department of Transportation
Commission	California Transportation Commission
IMMS	Integrated Maintenance Management System
Inventory Database	Transportation Management System inventory database
TMS	Transportation Management System

Summary

Transportation management systems serve as essential central data collection structures for monitoring traffic performance, responding to roadway incidents and issues, and providing traveler information to the public. The California Department of Transportation (Caltrans) has over 20,000 transportation management system (TMS) units on the state highway system. These TMS units are an integral part of the state highway system, performing critical functions that keep people, vehicles, and goods moving.

Senate Bill 1 (Beall, Chapter 5, Statutes of 2017) requires that 90 percent of TMS units are in good condition by 2027. Caltrans reports its progress towards achieving this performance target to the California Transportation Commission (Commission) in its annual performance reports. Most recently, Caltrans reported in its 2021-22 Performance Benchmark Report that 78.7 percent of its TMS units were in good condition.

In April 2018, we performed an audit of the Baseline for SB 1 Performance Outcomes to determine whether Caltrans developed: (1) a plan and performance criteria to meet the Senate Bill 1 performance outcomes, (2) policies and procedures to adequately track and assess asset conditions, monitor, and report on Senate Bill 1 outcomes, and (3) a baseline inventory of assets and their conditions that was supported and reliable. The audit found that the TMS baseline inventory was inaccurate because Caltrans' database was not consistently updated and was missing critical life cycle dates. The audit also found that TMS units were not clearly defined, resulting in certain units being double counted.

The purpose of this audit was to determine whether Caltrans implemented corrective actions to address the three recommendations we made in our April 2018 audit. The three recommendations to Caltrans were:

1. Clearly define the TMS elements and the expected life cycle for the elements.
2. Complete the process of updating their inventory and ensure that reliable data is in the system. Once completed, a new assessment must be performed.
3. Develop policies and procedures to ensure district staff consistently perform updates to maintain a reliable asset inventory system.

Based on this audit, we conclude that Caltrans fully implemented the first recommendation and partially implemented the remaining two recommendations. Specifically, we found that Caltrans clearly defined its TMS units, including their life expectancy, in its Transportation Management System Asset Management Guide (asset management guide). However, we found that Caltrans did not consider functional availability in previous reporting periods when determining a TMS unit's condition, resulting in the potential overstatement of the TMS units it had reported in good condition. In addition, although Caltrans developed policies and procedures as part of an asset management guide, it still needs to develop additional guidance as well as better quality control procedures to improve the reliability of its asset inventory system.

Introduction

Background

Caltrans is responsible for planning, developing, maintaining, and operating the state highway system. The state highway system includes a wide variety of physical assets, including four primary assets: pavement, bridges, drainage, and TMS. These four asset classes represent a significant portion of the state highway system maintenance and rehabilitation investments in California. This audit focused on the TMS asset class.

TMS units are an integral part of the state highway system and provide critical functions that keep people, vehicles, and goods moving. TMS is a system of electrical, electronic, and advanced vehicle detection technologies that work together to reduce highway user delay, enable optimization of traffic flow, provide traveler information and safety alerts, and collect information on traffic behavior that contributes to the reduction of greenhouse gas emissions.

Traffic Management System Core Units

- Traffic Signals
- Freeway Ramp Meters
- Changeable Message Signs
- Extinguishable Message Signs
- Closed Circuit Televisions
- Traffic Monitoring Detection Stations
- Traffic Census Stations
- Roadway Weather Information Systems
- Highway Advisory Radios

Source: Asset Management Guide

TMS units enable system operators to detect highway incidents and dispatch assistance or provide information about detours to minimize congestion related to incidents. In addition to providing real-time data for system operators and travelers, TMS units also provide historic data to help system planners and engineers forecast and plan projects. For purposes of asset management, Caltrans identified nine core types of TMS units, as listed in the text box, for establishing percentage targets relative to a unit's condition: good or poor.

Senate Bill 1 Requirements

Senate Bill 1, enacted in 2017, required that 90 percent of TMS core units to be in good condition by 2027. Towards that end, Caltrans considers a TMS unit in good condition if it is within its expected life cycle and is functionally available (or without chronic downtime). Caltrans reports its progress towards achieving this target to the Commission in its annual performance reports. As noted in Table 1 below, Caltrans has reported consistent improvement in TMS units in good condition over the first three fiscal years.

Table 1 - Performance Benchmark Reports, as reported by Caltrans

Fiscal Year	Percentage of TMS Units in Good Condition
2018-19	67.4%
2019-20	74.6%
2020-21	79.0%
2021-22	78.7%

Source: Caltrans' Annual Performance Benchmark Reports.

Caltrans also reports the condition of TMS units in its State Highway System Management Plan every two years. In its 2021 plan, Caltrans reported that it had a total of 20,481 TMS units in the state highway system and that 79 percent of them were in good condition.

Scope and Methodology

The purpose of this audit was to determine whether Caltrans implemented corrective actions to address the three recommendations in our April 2018 audit report, Baseline for SB 1 Performance Outcomes. Specifically, we recommended Caltrans do the following:

1. Clearly define the TMS elements and the expected life cycle for the elements.
2. Complete the process of updating their inventory and ensure that reliable data is in the system. Once completed, a new assessment must be performed.
3. Develop policies and procedures to ensure district staff consistently perform updates to maintain a reliable asset inventory system.

We gained an understanding of TMS program policies and procedures and assessed key internal controls significant to the audit objectives. We interviewed personnel responsible for establishing TMS policies and updating, maintaining, and providing support for the database. We conducted a statewide survey with the 12 district functional managers to understand the districts' TMS processes and procedures. We tested TMS units in five districts to verify the life cycle dates and reviewed the database to ensure that it contained all the necessary data fields. We included in this report the deficiencies in internal control that we determined were significant within the context of the audit objectives. We also reviewed the following relevant documents:

- 2021 and 2022 TMS Asset Management Guide

- 2019 and 2021 State Highway System Management Plans

- 2019, 2020, and 2021 Performance Benchmark Reports

- Federal Highway Administration's Transportation Performance Management Guide

In addition, we assessed the sufficiency and appropriateness of computer-processed information that we used to support our findings, conclusions, and recommendations. To assess the reliability of the inventory database, we performed electronic testing for obvious errors in accuracy and completeness, reviewed related documentation, and worked with the program to identify data problems. As noted in this audit report, we identified life cycle dates that did not match with the supporting documentation and some missing fields from the inventory database. Nevertheless, we determined the data was sufficiently reliable for the purposes of responding to our audit objectives.

We conducted this audit in accordance with generally accepted government auditing standards. These standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Audit Results

Based on our audit procedures, we conclude that Caltrans fully implemented one recommendation and partially implemented the remaining two recommendations (refer to Table 2). Specifically, we found that Caltrans took corrective action by clearly defining its TMS units, including their corresponding life expectancy, in its asset management guide. However, we found that Caltrans did not consider functional availability when determining a unit's condition over the first three fiscal years, resulting in the potential overstatement of the percentage of TMS units that it had reported in good condition. In addition, we determined that although Caltrans took additional corrective actions by developing an asset management guide in response to our prior audit's recommendation, it still needs to include specific guidance and better quality control procedures to improve the reliability of its TMS inventory. For Caltrans' corrective action plan, see Appendix A.

Table 2 - Summary of Caltrans' Corrective Action Plan Status

#	Audit Report Recommendations, April 2018	Corrective Action Implemented?
1	Clearly define the traffic management system units and the expected life cycle for the units.	Yes
2	Complete the process of updating their inventory and ensure that reliable data is in the system.	Partial
3	Develop policies and procedures to ensure district staff consistently perform updates to maintain a reliable asset inventory system.	Partial

Source: Caltrans' Corrective Action Plan for the April 2018 audit.

Finding 1 - Caltrans Has Clearly Defined Its TMS Units – Including Their Corresponding Life Expectancy – In Its Newly Developed Asset Management Guide

Our April 2018 audit found that Caltrans had not clearly defined each TMS unit, which resulted in some TMS units being double counted in its inventory. In addition, we found that the TMS baseline inventory was inaccurate because the database was inconsistently updated and was missing life-cycle dates.

In response to our prior audit, Caltrans fully implemented our recommendation by clearly defining its TMS units as part of a newly developed asset management guide. The guide refers users to the Office of System Management website to obtain the most up-to-date fact sheets for each TMS unit. These fact sheets clearly define each TMS unit. Specifically, and as noted in the text box, each fact sheet contains various components including, but not limited to, the life cycle, unit cost, how it is counted, a summary of its purpose, and TMS unit users. In April 2022, the asset management guide was further updated and reissued to the 12 districts. Caltrans also posted its April 2022 guide on its Division of Traffic Operations' website and notified its district functional managers during monthly meetings. By clearly defining each TMS unit, Caltrans will likely increase consistency of its data entry among the districts and ultimately reduce inventory inaccuracies. Promisingly, we did not find TMS units double counted in the current audit.

Fact Sheet Components for TMS Units

- Date Published
- Life Cycle
- Average Unit Cost
- How it is counted
- Life Cycle Replacement
- TMS Unit Summary
- TMS Unit Categories
- Purpose of TMS Unit
- TMS Unit Users
- One Time Costs
- Annual Costs
- Assumptions
- Typical Schematic

Source: Office of System Management, TMS Resources Website

Finding 2 - Caltrans Did Not Consider Functional Availability When It Determined a TMS Unit's Condition for the Past Three Fiscal Years, Potentially Overstating those It Had Reported in Good Condition

For asset management purposes, Caltrans categorizes TMS units as being in either good or poor condition. The condition of a TMS unit is based on determining whether the unit is within its expected life cycle and meeting consistent functional availability.[1] As noted in Table 3 below, functional availability is a key criterion in determining a TMS unit's condition.

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[1] In its April 2022 TMS Asset Management Guide, Caltrans provides the following definition of functional availability: "A unit is considered functionally available when it serves its intended purpose. A unit is considered functionally unavailable when a unit has chronic (see definition below) issues and cannot be repaired by Maintenance resources, it should be considered functionally unavailable to the TMC staff. Chronic: As defined by the Office of Traffic Systems Maintenance (TSM) within HQ Division of Maintenance, anytime a TMS is within its lifecycle but cannot reliably perform its intended function(s) due to issues which cannot be addressed with maintenance activities and resources, the

Table 3 - Transportation Management Systems Performance Metrics, as reported by Caltrans

Condition	Criteria
Good	1) Within expected life cycle and 2) **consistent functional availability**
Poor	Beyond expected life cycle or not meeting functional availability because of chronic downtime

Source: Caltrans' 2021 State Highway System Management Plan.

In its annual performance reports, Caltrans has been reporting consistent improvements in the overall condition of TMS units for the first three fiscal years. However, the data Caltrans used to calculate the percentage of TMS units in good condition did not include functional availability data until July 2021. Caltrans stated that prior to July 2021, the database did not have a field to capture functional availability. Consequently, in making the determination of condition, Caltrans used only one of the two elements of the criteria: that the unit was within the expected life cycle. Since Caltrans did not factor in its determination the second element of the criteria (whether the unit was functionally available) until July 2021, the reporting of TMS units in good condition over the last three fiscal years could have been overstated because it may have included units that were experiencing chronic downtime and were not functionally available. When we raised this issue to Caltrans, it estimated that the potential overstatement could be between 1 and 2 percent.

Finding 3 - Although Caltrans Developed an Asset Management Guide Following Our Previous Recommendation, It Still Needs to Provide Additional Guidance and Establish Better Quality Control Procedures to Improve the Reliability of Its Asset Inventory System

The asset management guide defines roles and responsibilities of Caltrans staff, including procedures to improve coordination between districts and Caltrans' headquarters, and references various resources and tools. For example, the guide includes various asset management elements, such as definitions of TMS units, guidance related to collection and analysis, practices for monitoring, procedures for quality control, and requirements for reporting.

The asset management guide also incorporates the TMS Inventory Database User Guide, which describes how to enter and edit inventory data, navigate throughout the database, and run special reports. Caltrans uses the database to track all TMS units statewide and store the corresponding documentation. The database is updated by district personnel who are responsible for entering data

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unit will [be] considered to have chronic issues and be flagged for full replacement with a SHOPP project or other capital improvement project. A data structure has been created in the TMS Inventory database and Trac for District TMS Maintenance Engineers (TME) in collaboration with Traffic Operations TMS Engineers to flag such units. Districts will make the final determination on the condition of the TMS using engineering judgement."

for each TMS unit, such as type, location, and installation date. The headquarters' Division of Traffic Operations updates fact sheets every few years with information on replacement costs, expected service life, and the most cost-effective replacement solution. Due to ongoing industry and policy changes, the asset management guide refers users to the Office of System Management website for the most recent updated fact sheets.

As shown in Table 1 in the *Background* section of this report, Caltrans has been reporting consistent annual progress towards achieving its 90 percent Senate Bill 1 performance target. As we described earlier, Caltrans considers a TMS unit in good condition if the unit is within its expected life cycle and is functionally available. However, for the five districts that we included in our review, we found discrepancies between the inventory database and the relevant source documentation. These discrepancies lessen the reliability of the data for the purpose of determining condition.

Life Cycle Date Discrepancies

As depicted in the text box, a TMS unit's "life cycle" consists of the following five types of dates: original install date, replacement date, re-certification date, technology replacement date, and relinquishment date. However, we found discrepancies between the dates used to reflect these types of life cycle dates and their corresponding source documentation.

To determine whether the inventory database was supported, accurate, and complete, we selected a total of 30 TMS units originating from five districts to review. However, we found that for 22 of these 30 TMS units, the inventory database reflected life cycle dates that did not match the source documentation, did not have any supporting documentation, or did not belong to Caltrans.

For 11 of the 22 discrepancies, the life cycle dates that were entered in the inventory database did not agree with their corresponding source records. In one of these 11 cases, the database reflected that a traffic census station had an "original install" date of June 25, 2012; however, the source records maintained by the district contained a different date of December 15, 2009. Significantly, the difference between these two dates is 30 months. Furthermore, for eight of the 22 TMS units, the districts could not locate or provide any records to support the life cycle dates

Types of Life Cycle Dates

1. <u>Original install date</u> – The date when a project installation is completed.

2. <u>Life cycle replacement date</u> – The date when the entire unit is replaced or re-certified to extend the life cycle.

3. <u>Re-certification date</u> – The district may re-certify a unit or components without upgrade or replacement.

4. <u>Technology replacement date</u> – The date when the primary technology components or more than 50 percent of the construction costs are expended for replacing the technology components or if the unit is re-certified from poor to good.

5. <u>Relinquishment date</u> – The date when a unit was removed from the State Highway System and is no longer a part of the Caltrans inventory.

Source: Asset Management Guide

that were reflected in the inventory database. According to Caltrans, these errors stem from improper project close-out practices and how each district keeps its as-built records. Lastly, we found three TMS units in the inventory database that did not even belong to Caltrans: two of the units belonged to Ventura County and the third unit belonged to the City of El Segundo. Refer to Table 4 for a summary of our analysis.

Table 4. Not All Lifecycle Dates Were Supported by District Records

#	District	Type of TMS Unit	Inaccurate Documentation	No Documentation	Not Owned by Caltrans
1	1	Extinguishable Message Signs	X	-	-
2	1	Roadway Weather Information Systems	X	-	-
3	1	Changeable Message Signs	-	X	-
4	1	Closed Circuit Televisions	-	X	-
5	1	Traffic Signals	-	X	-
6	3	Closed Circuit Televisions	-	X	-
7	3	Traffic Monitoring Stations	-	X	-
8	3	Traffic Signals	X	-	-
9	6	Traffic Census Stations	X	-	-
10	6	Traffic Monitoring Stations	X	-	-
11	6	Freeway Ramp Meters	X	-	-
12	7	Freeway Ramp Meters	-	X	-
13	7	Freeway Ramp Meters	-	X	-
14	7	Traffic Monitoring Stations	-	-	X
15	7	Traffic Monitoring Stations	-	-	X
16	7	Traffic Signals	-	-	X
17	9	Changeable Message Signs	X	-	-
18	9	Changeable Message Signs	X	-	-
19	9	Traffic Census Stations	X	-	-
20	9	Traffic Signals	X	-	-
21	9	Closed Circuit Televisions	X	-	-
22	9	Extinguishable Message Signs	-	X	-

Source: Analysis by the Independent Office of Audits and Investigations.

When we asked staff at the four districts (districts 1, 3, 6, and 9) that had inaccurate documentation, they corroborated the inconsistencies we found by telling us that they had used several different sources of dates interchangeably in the inventory database, such as the "construction contract acceptance" date, the "task order completion" date, or the "as-built plans" date. However, these dates can vary significantly from one another and, consequently, should not be used interchangeably for a particular life cycle date. As shown in Example A on Table 5, the difference between the "as-built plans" date and the "construction contract acceptance" date used to reflect the unit's installation life cycle date was more than two years apart.

Table 5. Differences in the Source Documentation Used for Life Cycle Dates

	Installation or Replacement Date		Difference: Days	Difference: Years
	As-Built Plans	Construction Contract Acceptance		
Example A	July 18, 2014	August 12, 2016	756	2.1
Example B	September 26, 2011	March 18, 2013	539	1.5
Example C	December 8, 2008	December 15, 2009	372	1.0

Source: Analysis by the Independent Office of Audits and Investigations.

In addition, staff at the four districts (districts 1, 3, 7, and 9) that were missing documentation stated that district engineers entered those life cycle dates into the database using their professional judgment. However, without documenting what the engineers based their professional judgement on, Caltrans has no way of ensuring the dates are accurate.

While the asset management guide defines staff roles and responsibilities and outlines quality control expectations on a monthly, quarterly, and annual basis, we found that it lacks specificity on the type of source documents staff should use to ensure accurate and consistent entry into the database. For example, the asset management guide is silent on which sources should be used when determining a TMS unit's life cycle date. Life cycle dates, such as the replacement and installation dates, directly affect the inventory because they are necessary to determine a unit's condition. Lack of accurate and complete data may lead Caltrans to overlook TMS units in need of repair or cause it to inadvertently replace or repair TMS units that are still in good condition. Moreover, the percentage of units that Caltrans has been reporting in good condition may also be affected by the inclusion of units that Caltrans did not actually own.

Required Data Missing from the Inventory

Based on our review, we also found that certain required fields were left blank in the inventory database. Specifically, the Integrated Maintenance Management System[2] (IMMS) identification number and the Direction fields were not consistently populated with data in the inventory as required by the asset management guide. IMMS identification numbers are crucial information for field maintenance crews to identify whether TMS units need to be repaired, whereas the Direction field is one of the elements that describes the TMS unit's directional heading along the state highway system (this includes: Northbound, Westbound, Southbound, and Eastbound).

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[2] The Integrated Maintenance Management System is used to record, report, and monitor maintenance work planned and performed.

To determine data completeness, we exported data from the inventory database as of June 1, 2021, and sorted it by the IMMS identification number and the Direction field. Out of 21,181 TMS units, we found 775 units (or 4 percent) were missing the IMMS identification number and 4,199 units (or 20 percent) were missing the Direction field. Caltrans' Division of Maintenance acknowledged that it did not complete a reconciliation between the inventory database and the IMMS database, which may have identified some of these missing fields. Caltrans' Division of Traffic Operations stated that the Direction field is not considered critical and should not be a required field. Nevertheless, the asset management guide lists Direction as a required field.

Furthermore, the asset management guide outlines a data quality control and certification process to ensure confidence of the database's data. For example, districts are required to review changes to the data for quality control and quality assurance periodically throughout the year. The asset management guide outlines quality control expectations on a monthly, quarterly, and annual basis. District managers are responsible for performing updates and entries into the inventory database to reflect all inventory, including any inventory-related changes in their districts. The asset management guide emphasizes that timely updates are not only important but are critical to ensure data is accurate. Without having all the IMMS identification numbers and Direction fields populated, field maintenance crews may not have a complete inventory of the TMS units needing repair.

Recommendations

To address the findings in this report, we recommend Caltrans should:

1. Acknowledge for transparency purposes in future public reports, such as its annual Performance Benchmark Report and State Highway System Management Plan, that it did not factor a TMS unit's functional availability when it previously determined and reported on the condition of TMS units and that it may have overstated the overall percentage of TMS units that it had reported in good condition.

2. Update its TMS inventory and maintain the corresponding documentation to support life cycle dates that are reflected in the database.

3. Ensure its inventory only includes TMS units that are owned by Caltrans.

4. Establish additional guidance to ensure staff consistently and accurately determine life cycle dates, including but not limited to, specific source documents to be used to determine a TMS unit's installation and replacement dates.

5. Perform quality control reviews to ensure that the inventory database includes all required fields including, but not limited to, the IMMS identification number field and the Direction field.

Appendix A

Caltrans' Corrective Action Plan for April 2018 Audit

Audit Recommendation	Caltrans Status Update as of February 2, 2021	Estimated Completion Date
Clearly define the traffic management system elements and the expected life cycle for the elements.	1. TMS unit costs are updated in the 2021 SHSMP, to be implemented in July 2021. 2. A TMS unit has two (2) distinct components; the technology components and the structural components each with its own life cycle in the 2021 SHSMP, to be implemented in July 2021. 3. The updated asset condition definitions and management strategy will be implemented in 2021 SHSMP. **Status: Completed**	September 2020
Develop policies and procedures to ensure district staff consistently perform updates to maintain a reliable asset inventory system.	1. A Quality Management Plan process is included in the TMS Asset Management Guide, published in January 2021. The asset management guide provides procedures to ensure assets and condition are accounted, certified, recorded and validated in the asset inventory system. 2. A joint memo from Traffic Operations and Asset Management was issued to the districts in December 2020. TMS Asset Management Guide was developed and published in January 2021. 3. A joint memo from Traffic Operations and Asset Management was issued to the districts in December 2020. TMS Asset Management Guide was developed and published in January 2021. **Status: Completed**	December 2020
Complete the process of updating their inventory and ensure that reliable data is in the system. Once completed, a new assessment must be performed.	1. Inventory in TMS Inventory and IMMS Databases are now linked with the IMMS_ID. 2. The reconciliation effort is complete. 3. HQ and Districts completed the data validation. 4. TMS condition definitions and management strategies have been updated in the 2021 SHSMP, to be implemented in July 2021. 5. The data has ID numbers and other required fields. 6. The TMS Worksheet has been added to the Asset Management Tool. 7. Pipelined projects entered into the 2022 SHOPP have a unique identifier to ensure TMS identification and condition reporting are included. 8. A procedure has been established in the TMS Asset Management guide, published in January 2021, to run the assessment periodically. **Status: Completed**	December 2020

Auditee's Response

CALIFORNIA STATE TRANSPORTATION AGENCY   GAVIN NEWSOM, GOVERNOR

California Department of Transportation

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October 5, 2022

Mr. Bryan Beyer
Inspector General
Independent Office of Audits and Investigations
P.O. Box 942874, MS-2
Sacramento, CA 94274-0001

Dear Mr. Beyer:

We received your draft audit report titled "Caltrans SB1 Performance Outcomes – Transportation Management Systems" transmitted to Caltrans on September 21, 2022, from the Independent Office of Audits and Investigations (IOAI). We appreciate the communication during the process, and that IOAI recognized the work that Caltrans has done since the release of the April 2018 Audit.

In general, we concur with the findings outlined in the draft audit report. We will also evaluate the recommendations of the IOAI provided in the draft audit report as part of our obligation to continuous process improvement. The Divisions of Traffic Operations and Maintenance in close coordination with other Caltrans programs are committed to addressing the identified areas of improvement. We intend to update our policies, procedures, and guidelines to ensure we meet and exceed the SB 1 requirements and targets. We are also actively working to improve the accuracy of our TMS Inventory and associated datasets. We will provide IOAI with a status update of the progress on implementing the recommendations and the resulting improvements.

If you have questions, you may contact me at (510) 314-5335 or by email at david.man@dot.ca.gov.

Sincerely,

David S Man

DAVID MAN
Acting Division Chief, Traffic Operations

"Provide a safe and reliable transportation network that serves all people and respects the environment"

Mr. Bryan Beyer, Inspector General
October 5, 2022
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c: Diana Antony, Chief Deputy, Independent Office of Audits & Investigations
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   Cory Binns, Deputy Director, Maintenance & Operations, Caltrans
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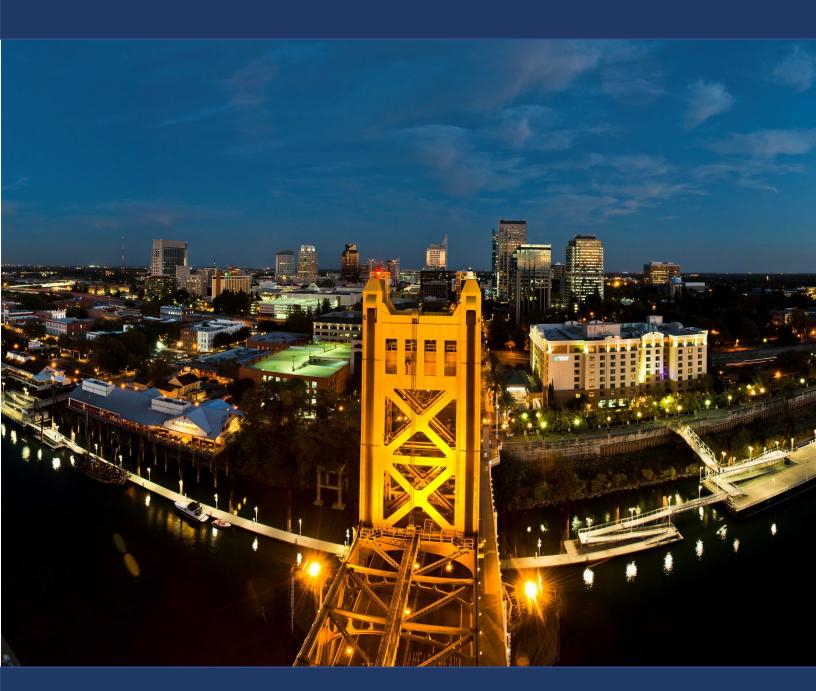   Ben Shelton, Audit Chief, Internal Audits Office, Caltrans

"Provide a safe and reliable transportation network that serves all people and respects the environment"

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