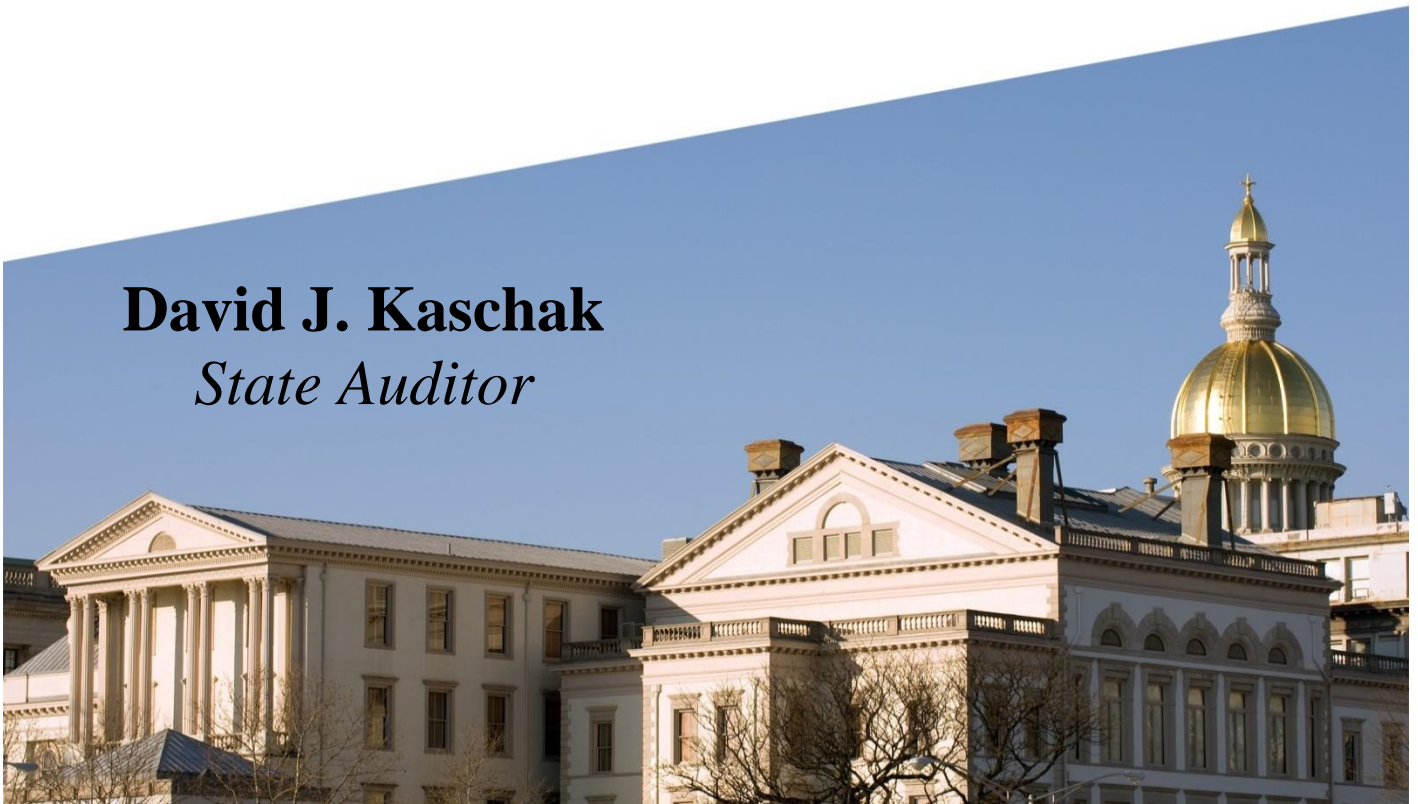New Jersey Legislature
★ Office of LEGISLATIVE SERVICES ★

OFFICE OF THE STATE AUDITOR

Department of Transportation
Bureau of Transportation Data and Support
Crash Records Unit

January 1, 2018 to March 31, 2022

David J. Kaschak
State Auditor

NEW JERSEY STATE LEGISLATURE
★ *Office of* LEGISLATIVE SERVICES ★

OFFICE OF THE STATE AUDITOR
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The Honorable Philip D. Murphy
    Governor of New Jersey

The Honorable Nicholas P. Scutari
    President of the Senate

The Honorable Craig J. Coughlin
    Speaker of the General Assembly

Ms. Maureen McMahon
    Executive Director
    Office of Legislative Services

     Enclosed is our report on the audit of the Department of Transportation, Bureau of Transportation Data and Support, Crash Records Unit for the period of January 1, 2018 to March 31, 2022. If you would like a personal briefing, please call me at (609) 847-3470.

David J. Kaschak
State Auditor
September 28, 2022

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Scope

We have completed an audit of the Department of Transportation (department), Bureau of Transportation Data and Support, Crash Records Unit (unit) for the period January 1, 2018 to March 31, 2022. The unit is responsible for collecting all New Jersey Police Crash Investigation Report forms (crash report) from all state and local law enforcement agencies (LEAs). These reports are processed, scanned, verified, and then stored in a uniform format in the department's Accident Records Database (ARD). The information is used to identify traffic safety problems, determine how resources are allocated, and design effective countermeasures to reduce fatalities and serious injuries on the state's roadways. We used the ARD data published on the department's website for our testing. The most recent data available during our audit was for calendar years 2018 and 2019.

The department has established safety programs, most of which are supported wholly or in part by federal Highway Safety Improvement Program (HSIP) funds and are data-driven. New Jersey received $57.3 million, $58.6 million, and $59.6 million of HSIP funds during federal fiscal years 2018, 2019, and 2020, respectively. The HSIP funds are also used for annual salary and benefit costs of the unit, which totaled $1.4 million and $1.2 million in calendar years 2019 and 2020, respectively, as well as for a vendor procured to scan and key data from crash reports, totaling $2.2 million in calendar year 2019.

Objectives

The objectives of our audit were to determine whether controls existed to ensure that all required crash reports were submitted timely to the department and to ensure the integrity and completeness of the data contained in the Accident Records Database.

This audit was conducted pursuant to the State Auditor's responsibilities as set forth in Article VII, Section I, Paragraph 6 of the State Constitution and Title 52 of the New Jersey Statutes.

Methodology

Our audit was conducted in accordance with *Government Auditing Standards*, issued by the Comptroller General of the United States. Those 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 the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

In preparation for our testing, we studied legislation, the administrative code, and policies of the department. Provisions we considered significant were documented, and compliance with those requirements was verified by interview, observation, and our testing of crash report data. We interviewed department personnel to obtain an understanding of the unit's business processes and the internal controls. In order to achieve our objectives, we performed various tests and analyses, as we determined necessary.

A nonstatistical sampling approach was used. Our samples of crash data were designed to provide conclusions on our audit objectives, as well as internal controls and compliance. Sample populations were sorted, and crash data was judgmentally selected for testing. Because we used a nonstatistical sampling approach for our tests, we cannot project the result to the respective population.

Data Reliability

We assessed the reliability of the crash data in the department's Accident Record Database by performing various analyses of the data and interviewing department officials knowledgeable about the data. We determined that the data was sufficiently reliable for the purposes of this report.

Certain other data in our report were used to provide background information. Data that we used for this purpose were obtained from the best available sources. *Government Auditing Standards* do not require us to complete a data reliability assessment for data used for this purpose.

Conclusions

We found controls existed for crash report submissions. However, these controls do not ensure all required crash reports are submitted to the department and in a timely manner. We determined the integrity and completeness of the data contained in the ARD could be improved. Furthermore, we made an observation regarding a data dictionary for users of the ARD.

Background

Pursuant to N.J.S.A. 39:4-131, every law enforcement officer who investigates a vehicle accident for which a report must be made shall forward a written report of such accident to the New Jersey Motor Vehicle Commission (commission) within five days of the investigation's conclusion. Pursuant to N.J.S.A. 39:5-30d, whenever a fatal accident occurs, an investigation of the incident shall be completed and forwarded within 72 hours of the time of the accident. Although the commission is responsible by statute to administer these reports, it relies on the department for collecting, tracking, storing, and reviewing the associated data.

Each crash report consists of 149 data fields (crash data) containing pertinent information, including the location, cause, conditions, and persons and vehicles involved. Once the unit reviews the crash data for completeness, it is considered verified and is uploaded into ARD "production", which allows the data to become accessible to other government agencies either directly or through Safety Voyager, another department web-based application. Safety Voyager is a crash analysis tool used by designers, planners, traffic engineers, LEAs, and others to identify accident causes, determine areas of focus, prioritize locations of high crash frequency, develop traffic safety countermeasures, and allocate resources. This information is often used to support federal and state grant applications and prioritize decisions regarding safety issues impacting

roadways. In addition, the department publishes annual crash tables to the department's website for public use. All crash data accessible to other government agencies or the public excludes personal identifying information.

Modernizing Crash Report Submissions

Crash reports are not required to be submitted electronically.

The unit verified an average of 280,000 crash reports during calendar years 2018 and 2019. The actual number of crash reports received exceeds this amount because updated crash reports are submitted to revise or add information. There is no requirement for LEAs to submit electronic crash reports. In calendar year 2019, only one of 536 LEAs submitted electronic crash reports. This LEA accounted for 15 percent of verified crash report submissions. The remaining 85 percent were submitted as paper copies through the mail or digitally-scanned copies through a secure file transfer account.

Processing paper or digitally-scanned reports is labor intensive and time consuming. After the unit manually sorts the crash reports received, they are sent to a state contract vendor. The vendor converts the data to an electronic format and scans the paper crash reports to create a digital image. These services cost the department $2.2 million in calendar year 2019. After the data is sent back to the department to be uploaded to the ARD, the unit compares certain fields from the digital image of the crash reports, such as the accident's exact location, to ensure those fields are populated. If these fields are incomplete, the unit will contact the LEA, and the crash report will remain unverified in the ARD until this data is supplied. Once verified, the data is uploaded to the ARD "production", allowing other agencies access to the data. Per management, the majority of LEAs also convert their hand-written crash reports to an electronic record using contract vendors. However, prior to July 2021, the LEAs were not able to submit the electronic records to the department, resulting in a duplication of effort.

In July 2021, the department launched the New Jersey Crash Records Portal (NJ Crash or portal) to allow LEAs to submit electronic crash reports through an online portal at no cost to the LEAs. As of March 31, 2022, we noted only 18 LEAs were submitting crash reports through the portal. We estimate these submissions accounted for only two percent of all annual verified crashes. While crash reports submitted through the portal are still subject to the unit's usual verification process, they do not require additional work by the state contract vendor.

Recommendation

We recommend the department seek the necessary statutory authority to implement new regulations requiring the electronic transmission of crash report data in order to streamline the data entry and verification process. Similar requirements have been adopted at other state agencies.

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Crash Report Submissions

The department needs to strengthen their monitoring to ensure LEAs regularly submit crash reports.

The department did not consistently monitor to ensure all LEAs regularly submit crash reports and did not verify the crash report submissions (submissions) were within the time frames required by statute. There are no procedures in place that require an LEA to certify the number of accidents under its jurisdiction on a routine basis. Additionally, the department does not maintain a master list of LEAs to monitor submissions, including those with zero accidents. Therefore, the department is unable to determine, with certainty, whether an LEA underreported this information. We also noted crash report submission dates are not entered in the ARD, thereby preventing the department from determining the timeliness of submissions.

We analyzed the number of submissions from the 525 LEAs that submitted crash reports in one or both of calendar years 2018 and 2019. We found an average of 84 LEAs did not submit crash reports at all for three months or more in each calendar year. In addition, an average of 184 LEAs had a low number of submissions for at least three months when compared to their adjusted yearly average. We calculated the adjusted yearly average by dividing the total number of crash reports received for the calendar year by the total number of months with reported crash data. Based on this analysis, we estimate the department is missing 7,800 and 8,200 crash reports for calendar years 2018 and 2019, respectively.

As a result of our analysis, the department established a new tracking report that calculates 80 percent of the prior five-year average of total submissions for each LEA and highlights those that fall under that threshold. Based on the department's methodology, we identified an additional 18 LEAs that had no submissions for three or more years between calendar years 2015 and 2019. Six other LEAs had submitted crash reports in either calendar year 2018 or 2019 but had no submissions for three or more calendar years between 2015 and 2019. The crash tables for each calendar year on the department's website only includes those LEAs that have submitted at least one crash report during that calendar year. Therefore, the number of LEAs fluctuates based on those with submissions. LEAs with no submissions during this five-year period are not included in the ARD or our analysis.

Per the department, LEAs are not always responsive to inquiries related to a decline in submissions or requests for missing crash report data even though this information is required by statute and is used to improve roadway safety.

Recommendation

We recommend the department enhance the design of the tracking report and published data on their website to include all LEAs, even those reporting zero crash activity. In addition, we recommend the department use this report to strengthen monitoring through inquiries of LEAs

that appear to be underreporting. Also, the department should seek legislative changes to help it enforce compliance requirements for those LEAs that regularly fail to submit crash reports.

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Fatal Crash Counts

The department should ensure that all fatalities are recorded and properly classified in the Accident Records Database.

The New Jersey State Police (state police) reviews the crash report data for all fatal crashes and enters this information into its Fatal Crash Tracking System (FCTS). This includes a review of the death classification as a traffic or non-traffic fatality. A non-traffic fatality is a death that occurred due to natural causes, suicide, homicide, or overdose; on a private roadway; or more than 30 days after the date of the accident. The state police is also responsible for inputting the required traffic fatality data into the National Highway Traffic Safety Administration's (NHTSA) Fatality Analysis Reporting System (FARS). The NHTSA uses the FARS to monitor fatalities nationwide in order to provide an overall measure of highway safety, to help identify traffic safety problems, suggest solutions, and to help provide an objective basis to evaluate the effectiveness of motor vehicle safety standards and highway safety programs.

We found the traffic fatality counts reported in the ARD did not agree with the fatality counts per the FCTS. We identified 42 and 39 traffic fatality discrepancies in calendar years 2018 and 2019, respectively, as shown in the following reconciliation.

Reconciliation of Traffic Fatalities per ARD to State Police's FCTS

		CY 2018	CY 2019
Traffic Fatalities per ARD		**583**	**533**
Plus:	Traffic Fatalities - Misclassified in ARD	9	17
	Traffic Fatalities - Missing from ARD	2	15
Less:	Non-Traffic Fatalities - Classified as Traffic Fatalities	(28)	(6)
	Traffic Fatalities - Recorded in Duplicate	(3)	(1)
Traffic Fatalities per State Police's FCTS		**563**	**558**

Multiple circumstances have contributed to these errors. The department can verify a crash report while awaiting a final death determination. However, there is no policy or procedure in place to ensure the department is notified by the state police when fatality classifications are determined or updated and the case is closed. This may prevent necessary updates to the ARD from occurring timely. In addition, the department does not reconcile the fatal crash data between the ARD and the state police's FCTS to ensure all fatal crashes have been recorded and properly classified as either a traffic or non-traffic fatality in the ARD. When traffic fatality data is missing or

misclassified in the ARD, users, such as designers, planners, and traffic engineers, may not have sufficient information to develop and deploy safety countermeasures in an effort to reduce fatalities and serious injuries on the state's roadways.

Recommendation

We recommend the department, in coordination with the state police, establish written policies and procedures regarding the communication and documentation needed to record fatalities. In addition, the department should reconcile fatality counts between the ARD and the state police's FCTS to ensure all fatal crashes and associated fatalities are properly classified and recorded.

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Edit Checks

The Accident Records Database does not contain edit checks to identify potential missing records and incomplete data fields.

We found edit checks were not in place to identify potential missing records, incomplete data fields, or improperly coded fields prior to the data being uploaded to the ARD. Additionally, the unit does not evaluate the accuracy of certain fields during the crash report verification process. Failure to ensure records are entered and fields in the ARD are properly populated may impact decisions regarding the prioritization of projects, the design of roadways, the allocation of resources, and the development of countermeasures and other safety programs when this data is relied upon.

The commission publishes a manual that provides law enforcement officers with specific instructions on how to complete each data field in the crash report. Each verified crash report is assigned a case number and is entered into the ARD as a unique record. If a data field is not populated, the accident record is not properly completed. Furthermore, certain data fields in the ARD are interrelated, and failure to properly populate these fields may lead to discrepancies when users query the data.

For example, the ARD includes a field for an accident's severity classification. This field is automatically populated with the highest severity level assigned to any occupant and/or pedestrian involved in the accident, as identified in the physical condition field. If the physical condition field is blank, contains an improper code, or does not exist because an occupant and/or pedestrian record was not entered, an accident's severity classification may be incorrect. We identified 4,003 accidents with potential injuries to 5,602 occupants in calendar year 2018 based on how the injury, treatment, and/or hospital code fields were populated; however, when querying the severity classification in the ARD, these accidents were not identified as an accident resulting in injury because the physical condition field was blank or contained an improper code. We found the manual directs law enforcement officers to ensure the corresponding injury fields are populated when an occupant's physical condition is populated with certain codes, but it does not

direct them to ensure the physical condition field is populated when the injury, treatment, and/or hospital field is populated.

Additionally, we analyzed the interrelationships between the vehicle, driver, and occupant data in the ARD. Each accident record should have information for at least one vehicle and for each occupant of a vehicle, including the driver. We excluded hit and run cases with an unoccupied parked vehicle from our analysis. From the 567,399 cases in calendar years 2018 and 2019, we identified a minimum of 6,974 occupant records that were not entered into the ARD for those two years.

Beginning in July 2021, crash reports submitted through NJ Crash are subject to edit checks developed to identify critical and informational errors. As of March 31, 2022, crash data submitted through this portal were not available for our review. Our review of the NJ Crash data specifications manual identified critical errors that are required to be addressed by an LEA prior to submission. In addition, informational errors were identified that could address certain potential missing data. However, LEAs are not required to address these errors. Furthermore, LEAs are not required to submit crash reports through NJ Crash.

Recommendation

The department should develop edit checks within the ARD to ensure the completeness of the crash report data.

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Observation

Data Dictionary

The department does not publish a data dictionary for users of its Accident Records Database.

The department provides downloadable master file table layouts for the ARD listing the field names and data configuration; however, it does not publish a data dictionary to help users easily identify the description of codes in each data field. The crash reports manual identifies code descriptions but requires a user to search more than 100 pages for the information. The most recent edition of the manual, dated December 1, 2018, is available on the department's website, but it is not conveniently located on the same page as the master file table layout documents. In addition, we noted the codes presented in the manual to differentiate between pedestrians, bicyclists, and others did not agree with the codes contained in the ARD. This type of discrepancy could result in inaccurate conclusions being drawn if a user relies on data from this field.

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PHILIP D. MURPHY
Governor

DIANE GUTIERREZ-SCACCETTI
Commissioner

SHEILA Y. OLIVER
Lt. Governor

September 26, 2022

Mr. Brian M. Klingele
Assistant State Auditor
Office of the State Auditor
125 South Warren Street
P.O. Box 067
Trenton, New Jersey 08625-0067

Re: **Response to Draft Audit Report of the Department of Transportation, Bureau of Transportation, Data and Support, Crash Records Unit**

Dear Mr. Klingele:

The New Jersey Department of Transportation (the Department) is in receipt of the above-mentioned Office of the State Auditor's (OSA's) draft audit report titled "Department of Transportation, Bureau of Transportation, Data and Support, Crash Records Unit." We appreciate OSA's review and thank you for the opportunity to comment on the draft audit report.

Please find below the following responses to the draft audit report:

OSA Recommendation
We recommend the department seek the necessary statutory authority to implement new regulations requiring the electronic transmission of crash report data in order to streamline the data entry and verification process. Similar requirements have been adopted at other state agencies.

Response
The Department agrees with the OSA's recommendation that legislation is needed to support the Department's launch of the New Jersey Crash Records Portal (NJ Crash). The current legislation places the burden of submission, timeliness of submittal, and accuracy of the NJTR-1 accident with Local Enforcement Agencies (LEAs), not the Department. The Department is pursuing legislation to modify N.J.S.A. 39:4-131 to require the electronic submission of accident reports. We look forward to working with the Legislature on a permanent solution.

Further, as of September 14, 2022, 37 Law Enforcement Agencies (LEAs) are utilizing NJ Crash.

OSA Recommendation

We recommend the department enhance the design of the tracking report and published data on their website to include all LEAs, even those reporting zero crash activity. In addition, we recommend the department use this report to strengthen monitoring through inquiries of LEAs that appear to be underreporting. Also, the department should seek legislative changes to help it enforce compliance requirements for those LEAs that regularly fail to submit crash reports.

Response

The Department agrees with the OSA's recommendation to enhance the design of the tracking report. The Department has addressed the enhanced tracking through the re-design of the new Accident Record Database (ARD) Cloud version, which will include a Police Timeliness Report that will automatically send, on a predetermined schedule, a report to LEAs failing to submit or under-submitting crash reports. The current version of ARD can provide a Police Timeliness Report that requires the user to manually run a report and is not automatically transmitted to LEAs.

However, the Department disagrees with the OSA's recommendation to publish any data on our website relating to LEAs reporting activity. The Department's tracking has significantly improved over the last 2 years as we are utilizing the Police Timeliness Report to monitor and track LEAs that appear to be underreporting. In April 2021, approximately 100 LEAs were identified, contacted, and advised of their lack of submissions. In May 2022, 17 LEAs were identified, contacted and advised of their lack of submissions for the 2019, 2020 and 2021 calendar years. Further, under the new Accident Record Database, LEAs will automatically receive notice of missing reports. The Department will continue to monitor and track the underreporting LEAs.

OSA Recommendation

We recommend the department, in coordination with the state police, establish written policies and procedures regarding the communication and documentation needed to record fatalities. In addition, the department should reconcile fatality counts between the ARD and the state police's FCTS to ensure all fatal crashes and associated fatalities are properly classified and recorded.

Response

Currently, the Department has an established procedure for recording and reconciling fatalities with the New Jersey State Police. Specifically, the Crash Records Unit receives fatal accident reports from the State Police and other LEAs by email, facsimile transmission, and mail. To ensure our reports/data coincide, fatal accident reports from LEAs received by mail are scanned and forwarded to the State Police for verification. Thereafter, the fatal accident reports are logged into a spreadsheet and reviewed to ensure all critical fields are completed. If any critical fields are incomplete the report will be returned to the submitting LEAs for missing information. The Department further cross checks the State Police reports against the Department's ARD on a quarterly basis to confirm concurrence.

Also, the Department is creating a module in the new ARD cloud database that will be accessible to the Department and the State Police, so that all fatal reports may be entered into this database by both parties regardless of how the fatal accident reports are received. This will synchronize all fatal reports.

The Department agrees with the OSA's recommendation that these established procedures should be memorialized in writing.

OSA Recommendation

The department should develop edit checks within the ARD to ensure the completeness of the crash report data.

Response

At the present time, incoming accident reports are manually evaluated for missing information in critical fields. If missing information is identified, the reports are returned to the submitting LEAs for corrective action. Further, repeated missing information from critical fields are compiled and included in future NJTR-1 training courses.

The Department agrees with the OSA's recommendations and has been developing edit checks within the new ARD cloud database. The new NJ Crash application includes a series of validation checks that are performed to ensure the data is entered correctly and accurately. For example, if an accident record does not contain the minimum information needed, the record will immediately be rejected. If the record has all the minimum information, it is then run through a series of secondary validation checks to ensure the records completeness and accuracy. Any failure on a validation check will be recorded into the NJ Crash Reporting database for further review. An error report is created and will be shared with all LEAs and vendors.

Also, the Department updated the instructions in the NJTR-1 Crash Report Manual to address the OSA's comments in the edit check section of the report.
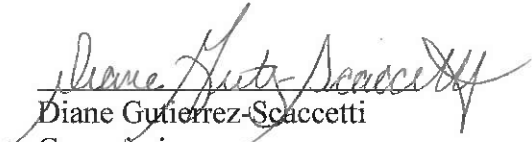

OSA Observation

The department does not publish a data dictionary for users of its Accident Records Database.

Response

The Department agrees that a data dictionary of its Accident Records Database would be helpful to the user and will be updated and posted on the public facing website.

Thank you again for the opportunity to review and comment on the draft audit report.

Sincerely,

Diane Gutierrez-Scaccetti
Commissioner
Department of Transportation

c: Joseph Bertoni, Deputy Commissioner
Michael Russo, Assistant Commissioner
Amalia McShane, Inspector General
Nicole Minutoli, Director, Division of Multimodal Services
Jonathan Trauger, Program Supervisor, Office of Internal Audit