



City of New York

OFFICE OF THE COMPTROLLER

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MANAGEMENT AUDIT

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Deputy Comptroller for Audit

Audit Report on the Department of
Transportation's Tracking of Pothole
Repairs

ME15-114A

June 29, 2016

<http://comptroller.nyc.gov>



THE CITY OF NEW YORK
OFFICE OF THE COMPTROLLER
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NEW YORK, NY 10007

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June 29, 2016

To the Residents of the City of New York:

My office has audited the New York City Department of Transportation (DOT) to determine whether it adequately tracks its pothole repair efforts. We perform audits such as this to increase accountability and to ensure that City agencies are meeting their responsibilities in a timely manner.

The audit found that DOT's tracking of pothole repairs needs improvement. In particular, DOT does not track the timeliness of its highway and bridge pothole repairs, which accounted for about 20 percent of all pothole repairs performed by DOT in Fiscal Year 2015. In addition, almost 10 percent of the street pothole referrals DOT received in Fiscal Year 2015 were repaired more than 15 days after the date of the referral, thereby increasing both the risk of accidents and the City's liability for any injuries or property damage resulting from these accidents. Further, the audit found that the list of potholes repaired in Fiscal Year 2015 as reported in DOT's Field Information Tracking System contained numerous duplicates, and even some triplicates, which inflated the number of potholes repaired during that year. The audit also found inaccuracies in the pothole repair data that DOT uses for the Mayor's Management Report (MMR). Finally, DOT did not have adequate written policies and procedures to guide its pothole repair efforts.

The audit makes eight recommendations, including that DOT require its Arterial Maintenance Unit and Division of Bridges to record the date and source of each pothole referral they receive, revise its timeliness goal for pothole repairs from 30 to 15 days, ensure that it does not double or triple count the potholes it has repaired, ensure that the pothole repair data it submits for the MMR is accurate, and prepare specific written policies and procedures to guide its pothole repair efforts.

The results of the audit have been discussed with DOT officials, and their comments have been considered in preparing this report. Their complete written response is attached to this report.

If you have any questions concerning this report, please e-mail my Audit Bureau at audit@comptroller.nyc.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Scott M. Stringer".

Scott M. Stringer

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
Audit Findings and Conclusion	1
Audit Recommendations.....	2
Agency Response.....	2
AUDIT REPORT	3
Background	3
Objective.....	3
Scope and Methodology Statement.....	4
Discussion of Audit Results with DOT	4
FINDINGS AND RECOMMENDATIONS.....	5
Inadequate Tracking of Pothole Repairs by the Arterial Maintenance Unit and the Division of Bridges	5
Recommendation	6
Timeliness of Pothole Repairs Needs Improvement.....	6
Recommendations	8
FITS Data Weaknesses.....	9
Recommendations	10
Inaccuracies in the Pothole Repair Data DOT Uses for the Mayor's Management Report.....	11
Recommendation	11
Insufficient Policies and Procedures for Tracking Pothole Repairs.....	14
Recommendation	15
DETAILED SCOPE AND METHODOLOGY.....	16
ADDENDUM	

THE CITY OF NEW YORK OFFICE OF THE COMPTROLLER MANAGEMENT AUDIT

Audit Report on the Department of Transportation's Tracking of Pothole Repairs

ME15-114A

EXECUTIVE SUMMARY

The objective of the audit was to determine whether the New York City (the City) Department of Transportation (DOT) adequately tracks its pothole repair efforts. The audit scope was Fiscal Year 2015, July 1, 2014, through June 30, 2015.

DOT is responsible for the operation and condition of approximately 6,000 miles of streets, highways and public plazas; 789 bridge structures; and the nine boats in the Staten Island Ferry program. Its mission is to provide for the safe, efficient and environmentally responsible movement of people and goods in the City and to maintain and enhance the transportation infrastructure, including the rehabilitation and maintenance of the City's streets, highways and bridges. DOT's Roadway Repair and Maintenance (RRM) Division is responsible for the maintenance of City streets and highways (arterials). DOT's Division of Bridges maintains roads on or near bridges.

Road defects are generally identified through complaints received from the public through 311 calls or the DOT website. Defects are also identified by DOT work crews, generally when they are doing other repair work. The Mayor's Management Report (MMR) stated that DOT repaired 460,493 potholes Citywide during Fiscal Year 2015. These potholes included 370,204 located on local streets and 90,289 located on the arterial highway system.

DOT's stated goal is to repair each reported pothole within 30 days. However, the New York City Administrative Code §7-201(c)(2) states that the City is shielded from civil actions brought against it for pothole-related damages as long as potholes are repaired within 15 days of any complaints about them having been filed. The MMR reported that it took an average of 5.6 days in both Fiscal Years 2014 and 2015 to repair a reported pothole located on a local street.

Audit Findings and Conclusion

DOT's tracking of pothole repairs needs improvement. In particular, the Arterial Maintenance Unit and the Division of Bridges do not track the timeliness of their highway and bridge pothole repairs. Potholes on arterial highways and bridges accounted for about 20 percent of all pothole repairs

performed by DOT in Fiscal Year 2015.¹ In addition, while the Street Maintenance Unit does track the timeliness of its street pothole repairs, almost 10 percent of the street potholes reported in Fiscal Year 2015 were repaired more than 15 days after the date of the report, thereby increasing the risk of an accident during that period for which the City could be held liable for any resulting damages. The audit found that 9.5 percent of reported potholes were repaired in 16 to 30 days, and 0.2 percent took more than 30 days to repair, ranging from 31 to 186 days.

Further, we found that the Fiscal Year 2015 Field Information Tracking System (FITS) list of repaired potholes provided by DOT contained numerous duplicates, and even some triplicates, which inflated the number of potholes actually repaired during that year. We also found additional inaccuracies in the pothole repair data that DOT uses for the MMR. Finally, we found that DOT did not have adequate written policies and procedures to guide its pothole repair efforts.

Audit Recommendations

To address these issues, the audit recommends, among other things, that DOT:

- Require that its Arterial Maintenance Unit and Division of Bridges record the date and source of each pothole referral they receive in order to monitor the timeliness of their pothole repair efforts.
- Revise its timeliness goal for pothole repairs from 30 to 15 days and enhance its efforts to complete all pothole repairs within 15 days to limit the City's legal liability and to improve the safety of the City's roadways.
- Ensure that it does not double or triple count the potholes it has repaired in relation to individual street defect numbers in its FITS tracking of the agency's pothole repair efforts.
- Ensure that the daily borough summary reports of repaired potholes, upon which the monthly reports for the MMR are based, are consistent with the numbers of repaired potholes reflected on the crew sheets.
- Prepare specific written policies and procedures that explain how reports of potholes should be handled, how work orders should be generated, and how information about repaired potholes should be collected and recorded by the Street Maintenance Unit, Arterial Maintenance Unit and Division of Bridges.

Agency Response

In its response, DOT agreed with three of our recommendations and disagreed with five. DOT also disagreed with several findings upon which these recommendations were based. Unfortunately, DOT's response is predicated upon a number of inaccurate statements about the audit findings and methodology and the applicable audit standards. These inaccuracies reflect a fundamental misunderstanding of the issues discussed in this report. Rather than effectively rebutting the findings or explaining the agency's rejection of the audit's recommendations, they reflect a defensive posture that appears aimed primarily at protecting the *status quo* and a reluctance to consider the observations and analysis provided by independent auditors. A detailed discussion of the DOT response is contained in the body of this report. After carefully reviewing DOT's arguments, we found them to be without merit.

¹ In addition to the 370,204 street pothole repairs and 90,289 highway pothole repairs that were reported in the MMR, DOT informed us that 4,660 bridge pothole repairs were completed during Fiscal Year 2015.

AUDIT REPORT

Background

DOT is responsible for the operation and condition of approximately 6,000 miles of streets, highways and public plazas; 789 bridge structures; and the nine boats in the Staten Island Ferry program. It operates 12,300 signaled intersections and over 300,000 street lights, and maintains 69 million linear feet of markings on City streets and highways.

DOT's mission is to provide for the safe, efficient and environmentally responsible movement of people and goods in the City and to maintain and enhance the transportation infrastructure, including the rehabilitation and maintenance of the City's streets, highways and bridges. DOT's RRM Division is responsible for the maintenance of City streets and highways (arterials). RRM has Street and Arterial Maintenance Yards in each borough. DOT's Division of Bridges maintains roads on or near bridges.

Road defects are generally identified through complaints received from the public through 311 calls or the DOT website. Road defects include potholes, cave-ins and hummocks.² Defects are also identified by DOT work crews, generally when they are doing other repair work.

The focus of this audit is potholes. The MMR stated that DOT repaired 460,493 potholes Citywide during Fiscal Year 2015 (July 1, 2014–June 30, 2015). These potholes included 370,204 located on local streets and 90,289 located on the arterial highway system. RRM's Street Maintenance Unit uses FITS to track its repairs of reported street defects throughout the five boroughs. The Arterial Maintenance Unit and the Division of Bridges use Access databases to track the repair of highway and bridge road defects.

DOT's stated goal is to repair each reported pothole within 30 days. However, the New York City Administrative Code §7-201(c)(2) provides that

no civil action shall be maintained against the city for damage to property or injury to person ... unless it appears that written notice of the defective, unsafe, dangerous or obstructed condition [on a street, highway or bridge] was actually given to the commissioner of transportation ... and there was a failure or neglect within fifteen days after the receipt of such notice to repair or remove the defect, danger or obstruction complained of.

Thus, the Code only shields the City from civil actions brought against it for pothole-related damages as long as reported potholes have been repaired within 15 days. The MMR reported that it took an average of 5.6 days in both Fiscal Years 2014 and 2015 to repair a reported pothole located on a local street.

Objective

The objective of the audit was to determine whether DOT adequately tracks its pothole repair efforts.

² A pothole is a hole in the street with a circular or oval shape and a definable bottom; cave-ins are jagged holes with a deep void, where pavement has split apart and fallen into a deep space without a solid bottom; and hummocks are roadway asphalt pushed up in a wave-like shape.

Scope and Methodology Statement

We conducted this performance audit in accordance with generally accepted government auditing standards. 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 objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. This audit was conducted in accordance with the audit responsibilities of the City Comptroller as set forth in Chapter 5, §93, of the New York City Charter.

The audit scope was Fiscal Year 2015, July 1, 2014, through June 30, 2015.

Discussion of Audit Results with DOT

The matters covered in this report were discussed with DOT officials during and at the conclusion of this audit. A preliminary draft report was sent to DOT on May 4, 2016, and was discussed at an exit conference held on May 17, 2016. On May 24, 2016 we submitted a draft report to DOT with a request for comments. We received a written response from DOT on June 8, 2016. In its response, DOT agreed with three of our recommendations and disagreed with five. DOT also disagreed with several findings upon which these recommendations were based.

Unfortunately, DOT's response contains a disconcerting number of inaccuracies regarding the audit's methodology and findings. In a number of instances (discussed in detail in the body of this report), the agency presents scenarios that are simply inaccurate. This is of particular concern because they come from the agency's senior management, which should be familiar with the operations of its own agency.

DOT's response also includes numerous erroneous statements purporting to describe the audit process and the standards by which we conduct our audits, including generally accepted government auditing standards (GAGAS). As is described in more detail in the body of the audit report, DOT previously misstated GAGAS requirements in response to a recent audit. Although we clearly explained in the previous audit report why DOT's understanding of these standards was fundamentally flawed, DOT unfortunately made the same mistakes in responding to this report. We urge DOT officials to review the requirements more closely to aid them in working with external auditors in the future. It might make future audits more helpful to the agency as a whole. After carefully reviewing DOT's arguments, we found them to be without merit for the reasons we discuss below. The full text of DOT's response is included as an addendum to this report.

FINDINGS AND RECOMMENDATIONS

DOT's tracking of pothole repairs needs improvement. In particular, the Arterial Maintenance Unit and the Division of Bridges do not track the timeliness of their highway and bridge pothole repairs. Potholes on arterial highways and bridges accounted for about 20 percent of all pothole repairs performed by DOT in Fiscal Year 2015.

In addition, while the Street Maintenance Unit does track the timeliness of its street pothole repairs, approximately 10 percent of the street potholes reported in Fiscal Year 2015 were repaired more than 15 days after the date of the report. According to the New York City Administrative Code §7-201(c)(2), the City's legal liability for pothole-related damages and injuries increases if a claim incident occurs more than 15 days after a pothole was reported and DOT did not repair the pothole in the intervening period. Thus, there is a risk of an accident relating to a pothole that is not repaired within the 15-day period resulting not only in injuries or property damage but also an increased financial liability to the City.

Further, we found that the Fiscal Year 2015 FITS list of repaired potholes provided by DOT contained numerous duplicates, and even some triplicates, which inflated the number of potholes actually repaired during that year. We also found additional inaccuracies in the pothole repair data that DOT uses for the MMR. Finally, we found that DOT did not have adequate written policies and procedures to guide its pothole repair efforts.

Inadequate Tracking of Pothole Repairs by the Arterial Maintenance Unit and the Division of Bridges

DOT receives notice of the existence of potholes (referrals) mostly from the public (through 311 or the DOT website) and from agency work crews. Pothole referrals are also received from other City agencies and from community boards. However, while the Street Maintenance Unit both records the sources and dates of referrals and uses this information to track the timeliness of repairs, the Arterial Maintenance Unit and the Division of Bridges do not.

Rather, the Arterial Maintenance Unit and the Division of Bridges record only the dates they receive highway and bridge pothole referrals through 311. DOT officials acknowledged that with regard to notices of highway and bridge potholes received from sources other than 311, they do not record the dates these notices are received. Further, DOT provided no evidence that these units track the timeliness of their pothole repairs. Although requested, DOT did not, for these two units, provide us with the dates of any pothole referrals, whether they were received through 311 or otherwise. In addition, officials of these two units told us that they do not use aging reports as a means of ensuring that even the 311 referrals are repaired in a timely manner.

Since DOT does not determine whether referrals of potholes on highways and bridges have been addressed in a timely manner, it cannot provide assurance that it is appropriately handling such referrals in order to protect the public from dangerous road defects and to limit the City's legal liabilities for the property damage or personal injuries that might result from such defects.

Recommendation

1. DOT should require that its Arterial Maintenance Unit and Division of Bridges record the date and source of each pothole referral they receive in order to monitor the timeliness of their pothole repair efforts.

DOT Response: “DOT’s Arterial Maintenance and Bridges Units track pothole repair counts and locations in their respective systems; however, the referral sources and response times are tracked in a separate system known as Siebel (311). The data for Fiscal Year 2015 from both of these systems were made available to the auditors. Since the timeliness of pothole repairs are tracked, DOT cannot agree with the finding.”

Auditor Comment: DOT’s response directly contradicts the information we were provided by DOT officials in the course of the audit. As stated in the report, we requested that DOT provide us with lists of the potholes repaired by these two units during Fiscal Year 2015. Although we requested that the lists include referral and repair dates, DOT failed to include *any* referral dates on these lists. Without referral dates, it is impossible to determine the timeliness of the repair efforts of these two units. When questioned about the absence of referral dates, DOT officials specifically acknowledged that DOT does not record referral dates or track the timeliness of the response of these two units to referrals from non-311 sources (e.g., from other City agencies, community boards, or DOT work crews).

DOT asserts that it tracks the timeliness of the response of these two units to 311 referrals. However, it has not provided any evidence to support this assertion. Accordingly, in the absence of evidence to the contrary, we find no basis to alter our finding or recommendation.

Timeliness of Pothole Repairs Needs Improvement

The timeliness of DOT’s street pothole repair efforts needs improvement. The Street Maintenance Unit records the dates that it receives pothole referrals, which allows the unit to track how long pothole repairs take. As noted above, the Arterial Maintenance Unit and the Division of Bridges do not record when pothole referrals are received.

DOT officials stated that they try to complete each pothole repair within 15 days of a referral in order to limit the City’s liability if a pothole is determined to be at least partly responsible for property damage or personal injury. The New York City Administrative Code shields the City from liability if any reported “defective, unsafe, dangerous or obstructed” conditions on a street, highway or bridge have been repaired within 15 days. (NYC Administrative Code §7-201(c)(2).) However, DOT officials further informed us that although they try to repair street defects within 15 days of notice, the agency’s internal goal is to repair all potholes within 30 days of notice. The reasonableness of DOT’s decision to establish an internal timeliness goal that is twice as long as the time period within which the agency can limit the City’s legal liability is questionable since it potentially exposes the City to increased liability and could as much as double the time that drivers are potentially at increased risk of injury on the City’s streets.

DOT provided us with a FITS pothole repair list for Fiscal Year 2015. This list identified 56,928 street defect numbers, each of which represents one or more referrals regarding one or more potholes, typically all of the reported potholes on a particular block. Of the 56,928 defect numbers,

5,412 (9.5 percent) were repaired in 16 to 30 days, and 104 took more than 30 days to repair, ranging from 31 to 186 days (with 97 of these 104 having been repaired within 31 to 37 days).³ The two largest sources of pothole referrals are the general public and DOT's Street Maintenance Yards. Those potholes identified by Street Maintenance Yard crews are usually repaired on the same day they are identified. Of the 56,928 assigned street defect numbers, 38,573 (68 percent) were pothole referrals received from the public. Of these 38,573 pothole referrals, 5,381 (14 percent) were completed in 16 to 30 days, and 102 were completed in more than 30 days, ranging from 31 to 186 days (with 96 of these 102 having been repaired within 31 to 37 days).

The timeliness of DOT's pothole repairs varies from borough to borough. As Table I below shows, Staten Island and Brooklyn were the two boroughs in which pothole repairs were the slowest. Almost two-thirds of the potholes (3,537 of the 5,381 potholes) that were repaired within 16 to 30 days and over 93 percent of the potholes (95 of the 102 potholes) that were repaired in 31 or more days were located in Staten Island and Brooklyn. Potholes located in Queens were repaired the quickest relative to the other four boroughs.

Table I
Timeliness of Pothole Repairs Referred to DOT by the General Public
By Borough during Fiscal Year 2015

Borough	Range of Days to Repair Pothole Defects			Total # of Defects
	Up to 15 days	16-30 days	31-186 days	
Queens	12,682	4	0	12,686
Manhattan	4,124	771	1	4,896
Bronx	3,578	1,069	6	4,653
Brooklyn	7,984	1,939	11	9,934
Staten Island	4,722	1,598	84	6,404
Totals:	33,090	5,381	102	38,573

In Fiscal Year 2015, the 2,096 claims that were filed with the City alleging property damage or personal injury attributable to potholes totaled almost \$600 million. Of the 2,096 claims, 163 were for \$1 million or more. Although many of these claims may not be well founded and none are likely to result in payouts of the amounts claimed, they serve as a reminder that potholes are road hazards that can cause injury and so must be addressed promptly to protect the public and to limit the City's legal liability in this area.

At the exit conference, DOT officials argued that they assign work based primarily on the potential danger of a reported pothole and only secondarily on the age of the report. While we agree that the repair of a very hazardous pothole should be the priority over a less hazardous pothole that was reported earlier, we believe that by establishing a goal to repair all reported potholes within 15 days, the agency will enhance its efforts to limit the City's legal liability while maintaining its policy of addressing the most hazardous potholes first.

³ Although we cite FITS data weaknesses in the next section of this report, we concluded that FITS data was sufficiently reliable for audit testing purposes.

Recommendations

2. DOT should revise its timeliness goal for pothole repairs from 30 to 15 days in an enhanced effort to limit the City's legal liability in this area and to improve the safety of the City's roadways.

DOT Response: "DOT recognizes that potholes are a road hazard and should be addressed promptly; however, it prioritizes work based upon public safety. DOT prioritizes pothole repairs in an efficient and productive manner while promptly addressing potholes which present the highest risk such as those located on high traffic roadways and those with the most severe defects. DOT often groups work geographically to allow the work crews to increase work time and decrease their travel time. This approach increases productivity and overall effectiveness of the pothole repair program. Prioritizing work solely by the date of referral could potentially leave potholes in high priority locations unrepaired for longer time and lead to a loss of efficiency of DOT work crews. For these reasons, DOT continues to use the historic 30 day measure for pothole repair work; however, as indicated in the Report, DOT repairs the great majority of potholes well within such period. Typically, repairs performed beyond 30 days are special cases involving multiple divisions within DOT or other agencies."

Auditor Comment: As stated in the report, we believe that by establishing a goal to repair all reported potholes within 15 days, DOT could enhance its efforts to limit the City's legal liability, while still maintaining its policy of addressing the most hazardous potholes first. A goal is a target, not a rigid requirement. Further, it does not preclude DOT from continuing to prioritize work based upon public safety, the supposed basis for its rejection of our recommendation. Given the fact that the City's legal liability commences 15 days after a pothole referral, it is problematic for DOT to maintain a 30-day goal for pothole repairs. We therefore urge DOT to reconsider its position and implement this recommendation.

3. DOT should enhance its efforts to complete all pothole repairs within 15 days.

DOT Response: "Although Recommendation 3 states that DOT should enhance its effort to complete all pothole repairs within 15 days, the data indicates that DOT repairs the overwhelming majority (over 85%) of pothole complaints within such 15 days. The audit finding is misleading since it is exception-based and implies that the exceptions are characteristic of the entire work load. If the Report included the actual numbers of timely pothole repairs compared to the total number of repairs, DOT's performance would be put in its proper context and clearly show the effectiveness of DOT's program."

Auditor Comment: DOT's response to this recommendation reflects a fundamental misunderstanding of the methodology we employed that led us to this finding, which is clearly set forth in report. There is nothing "exception-based" about this finding. Rather, it is the result of our review of *the entire population*. As stated in our report, of *the total population* of 38,573 street pothole referrals received from the public during Fiscal Year 2015, 5,381 (14 percent) were completed in 16 to 30 days, and 102 were completed in more than 30 days. DOT apparently would have accepted our methodology if, rather than reporting that 14 percent of pothole

referrals *had not been* repaired within 15 days, we had, as suggested by DOT, reported that 86 percent of pothole repairs *had been* repaired within 15 days.

4. DOT should review its pothole repair operations to determine whether there are steps taken by the Queens Street Maintenance Yard that could be used in the other boroughs, especially in Staten Island and Brooklyn, to improve the timeliness of pothole repairs.

DOT Response: “DOT is always looking for ways to improve operations and we hold regular meetings to share its successes. We recognize that in Fiscal Year 2015, Queens was a leader in timeliness of pothole repairs.”

Auditor Comment: It is disappointing that DOT is so reluctant to accept independent, external observations and analysis that it would not explicitly confirm that it will implement this recommendation and build on an apparent strength in DOT’s pothole repair program that the audit team recognized. In light of the shortcomings of the other borough maintenance yards that required 16 or more days to repair potholes associated with a total of over 5,300 pothole referrals during Fiscal Year 2015, we urge DOT to implement this recommendation.

FITS Data Weaknesses

We found inconsistencies and weaknesses in our review of DOT’s pothole repair data. On August 14, 2015, DOT provided FITS data that reflected, by street defect number, the street pothole referrals that the agency received in Fiscal Year 2015. The FITS data listed 56,928 street defect numbers that had been closed during Fiscal Year 2015 due to pothole repair.

Of the 56,928 street defect numbers closed in Fiscal Year 2015 due to pothole repair, 53,933 were noted as having been closed only one time, as would have been expected. However, we found that 2,981 street defect numbers had been closed twice, and 14 closed three times. Since FITS records the number of potholes that had been repaired in relation to each defect number, this error resulted in an overstatement of the number of potholes repaired during Fiscal Year 2015. As a result of 2,981 street defect numbers having been recorded as closed twice, FITS overstated the number of potholes that had been repaired by 18,080. As a result of 14 street defect numbers having been closed three times, FITS overstated the number of potholes that had been repaired in relation to these street defect numbers by 194.

By reviewing FITS data and the associated crew sheets (on which work crews report the number of potholes repaired during a work shift) for seven systematically-selected street defect numbers that were closed twice and seven systematically-selected defect numbers that were closed three times, we observed that the mistakes stemmed in part from data entry errors and in part from different crews submitting crew sheets reporting pothole repairs relating to the same street defect number.

By reviewing FITS data and the associated crew sheets for 76 systematically-selected street defect numbers that were closed once, we found 6 street defect numbers (eight percent) that were not reflected on any of the crew sheets prepared on the dates indicated by the FITS data. In addition, for 3 street defect numbers (four percent), the number of repaired potholes indicated in FITS differed from the number of repaired potholes indicated on the crew sheets, with the differences averaging 15 potholes per defect number. Each of the three differences represented an overstatement in FITS.

According to DOT officials, because the Arterial Maintenance Unit and the Division of Bridges do not use FITS, the agency relies on daily pothole repair reports from the Street and Arterial Maintenance Yards and the Division of Bridges for data consistency purposes in order to collect and provide pothole repair data for the MMR.⁴ However, since FITS is the primary tracking system for monitoring the Street Maintenance Unit's handling of pothole repair referrals, it is important for DOT to ensure that the pothole repair data it maintains in FITS is accurate for resource planning purposes and for the transparency and monitoring of its work.

Recommendations

5. DOT should ensure that it does not double or triple count the potholes it has repaired in relation to individual street defect numbers in its FITS tracking of the agency's pothole repair efforts.

DOT Response: "DOT recognizes that the FITS database has shortcomings with respect to the recording of pothole repair counts. To ensure more accurate reporting, DOT does not rely on FITS for these counts, but it utilizes an offline system for pothole repair counts. Therefore, questioning the reliability of FITs data for this purpose is misplaced.

"Although the Report states that some potholes were double or triple counted, it is clear that the auditors misunderstood the meaning of the data. The perceived double and triple counts are not of potholes repaired, but of repair actions. They actually reflect instances where a defect/pothole required multiple actions (i.e. the same location with separate repairs). It should also be noted that these instances constitute a small number of overall pothole work order efforts. In the majority of cases actual work was expended and is accurately reflected in the separate offline system for pothole repair counts."

Auditor Comment: Once again, DOT's response directly contradicts the information we were provided by DOT officials in the course of the audit. Our report states that of the 56,928 street defect numbers closed due to pothole repairs during Fiscal Year 2015, 2,981 were closed twice and 14 were closed three times. During our audit fieldwork, we observed that each time a street defect number was closed in FITS, the same number of potholes associated with that defect number was reported as repaired. Consequently, when a street defect number was closed twice, the sum of the reported pothole repairs associated with that defect number was doubled, and when closed three times, the sum of the reported pothole repairs was tripled. Furthermore, DOT's "multiple actions" explanation is dubious because the repair action dates for the multiple entries identified in this audit were generally the same as the repair actions dates for the initial entries in FITS closing the street defect numbers. The more likely cause of the duplicates and triplicates was data control weaknesses in FITS. Therefore, in the absence of evidence to the contrary, we find no basis to alter our finding.

6. DOT should take steps to ensure that FITS data corresponds with crew sheet data.

DOT Response: "DOT is working on improvements to its system and is in the process of developing a new pothole defect management system

⁴ A more detailed discussion of daily pothole repair reports and pothole repair data submitted for the MMR is contained in the next section of this report.

(PavementWorks), which will be rolled out in early Fiscal Year 2017. During the ongoing rigorous development process of PavementWorks, DOT is addressing issues such as transcription errors, system errors and assignment overlaps. PavementWorks will reduce these types of errors by streamlining data entry and defect assignment processes.”

Inaccuracies in the Pothole Repair Data DOT Uses for the Mayor’s Management Report

The number of potholes repaired by DOT and reported in the MMR is of questionable reliability. We reviewed crew sheets for 15 days in Fiscal Year 2015 to determine whether the daily summary reports of repaired potholes entered by the borough offices in DOT’s Daily Pothole Record Database were accurate. DOT’s central office uses the information from these daily summary reports to provide monthly pothole repair data for the MMR.

For the 15 days selected, DOT reported a total of 24,457 potholes having been repaired by the Street Maintenance Unit. However, based on the crew sheets provided, we found a gross discrepancy of 2,018 repaired potholes—over eight percent of the total. Specifically, we determined that 15 of the 75 daily reports (i.e., 15 daily reports from each borough office) overstated the number of repaired potholes by 1,213 and that 20 daily reports understated the number of repaired potholes by 805. In one example, for March 11, 2015, DOT provided eight crew sheets on potholes repaired in Brooklyn. However, one of the crew sheets was a duplicate. Since this crew sheet was counted twice by DOT, the number of repaired potholes reported in the Daily Pothole Record Database was overstated.

The weaknesses in DOT’s pothole repair data not only leads to inaccurate MMR information being given to the public, but can also adversely affect the quality of any managerial decisions that are based on this performance data.

Recommendation

7. DOT should ensure that the daily borough summary reports of repaired potholes, upon which the monthly reports for the MMR are based, are consistent with the numbers of repaired potholes reflected on the crew sheets.

DOT Response: “DOT acknowledges that there were minor inaccuracies in the pothole repair data that was analyzed for the related finding. However, the methodology used to reach this finding appears flawed and inconsistent with select provisions of Generally Accepted Government Audit Standards (GAGAS). Therefore, the resultant finding is not reliable.

“Specifically, the methodology used to count errors is not appropriate, since it was based on the gross value (absolute value) in analyzing the discrepancies over the 15 days sampled. The appropriate analysis should have used the net value rather than absolute value of inconsistencies of daily pothole repair counts, since the cumulative value is the reported figure in the MMR. The errors reported are neither consistent with nor applicable to this metric. When applying the net value methodology, the resultant error rate drops to below 2%. This fundamentally alters the Report’s finding that the MMR data is of questionable reliability, since a 2% error rate provides reasonable assurance that the data is accurate and counter to the

implication that DOT is over-reporting the number of pothole repairs. As presented, this is another example of exception-based reporting.”

Auditor Comment: Stripped of its jargon, DOT’s argument is essentially that the audit should have netted any over-reporting mistakes with any under-reporting mistakes, which is the net value of inconsistencies it calls for. We fundamentally reject this casual attitude toward the reliability of data submitted for the MMR and therefore find no basis to alter our conclusion.

DOT Response: “In addition, the auditors did not consider all the evidence provided by DOT. Pursuant to the Comptroller's Office request, DOT provided 21 days of crew sheets with over 200 individual pothole records. However, the auditors truncated their review of the sample size to 15 days. Also, the results reported appear to limit the data even further, by including only Street Maintenance pothole repair counts. This is inconsistent with Section 6.56 of Generally Accepted Government Audit Standards, which states:

Auditors must obtain sufficient, appropriate evidence to provide a reasonable basis for their findings and conclusions.

“By only reporting on 15 of the 21 days sampled, and apparently excluding Arterial Maintenance and Bridges data, the sufficiency audit standard is not met. In addition, at no point during the audit did the auditors interview any DOT Performance Analysis and Reporting (PAR) unit staff on the agency policies for MMR reporting. Had they done so, they would have learned that DOT uses the cumulative value in preparing the MMR pothole repair metric. Consequently, the report conclusions are inaccurate.

“In this report, the auditors used a judgmental sample to draw conclusions about data in the MMR. Since this was not a representative sample, it is not sufficient in size to provide a reasonable basis for this finding. The audit sample used in this analysis was 24,457 potholes, or 5% of the 460,493 potholes reported in the MMR for Fiscal Year 2015.”

Auditor Comment: Aside from simply asserting it to be the case, DOT fails to provide any evidence to support its statement that our review of 15 days of pothole repair data was insufficient. The 15 days we selected included days from all four seasons and from seven months of the year. We decided to review street potholes only for this test because they represented 80 percent of the total number of potholes that DOT claimed in the MMR to have repaired during Fiscal Year 2015 and because the total number of repaired street potholes is separately reported in the MMR. DOT erroneously compares the 24,457 repaired street potholes we reviewed to the combined total of 460,493 repaired street *and arterial* potholes reported in the MMR for Fiscal Year 2015. However, as is clear from its written response, DOT understands that for this analysis we only looked at repaired street potholes, of which the MMR reported there were 370,204 in Fiscal Year 2015. Hence, we looked at the reporting of 6.6 percent of the repaired street potholes in Fiscal Year 2015, not the “5%” suggested by DOT (which in and of itself would have been a credible sample size to provide insights into the reliability of the data that DOT uses for the MMR). DOT’s argument that the 24,457 repaired street potholes reviewed is insufficient in size reflects a lack of understanding of statistical

sampling. Since DOT provides no credible basis for its argument, we find no basis to alter our conclusion.

DOT also suggests that we should have interviewed staff in its Performance Analysis and Reporting unit on the agency's MMR reporting policies. However, throughout the audit, DOT presented the Senior Analyst in RRM as the key person in DOT responsible for collecting and summarizing pothole repair data from the borough maintenance yards for submission for the MMR. We communicated with this individual regularly throughout the audit.

DOT Response: "It should be noted that contrary to government audit standards related to the four elements of a finding, this finding does not mention the underlying cause of the discrepancies identified. Pothole data recording and counting is a highly manual and subjective process, especially during peak pothole season. The PavementWorks system will streamline the data entry process and reduce errors in pothole count reporting."

Auditor Comment: DOT's assertion here is incorrect, as would have been obvious had the entire audit report been read and considered in the preparation of the response. In fact, the cause for the inaccuracies in the pothole repair data that DOT uses for the MMR is clearly presented in the next finding section in which we discuss DOT's lack of adequate written policies and procedures. There, we explicitly state that DOT's procedures do not explain how information about repaired potholes should be collected and recorded, which is a cause of the MMR data weaknesses we discuss in this section.

We note that GAGAS does not require that each finding section in a report identify the cause of the finding discussed. As GAGAS section A6.06 states:

Auditors may also identify deficiencies in internal control that are significant to the subject matter of the performance audit as the cause of deficient performance. In developing these types of findings, the deficiencies in ... internal control would be described as the "cause."

This is exactly what we did in this audit report.

Further, DOT is simply incorrect when it states that GAGAS requires that the presentation of an audit finding must always identify the cause of the discrepancies reported. The existence of such a standard would be illogical because it would prohibit an audit team that uncovers a serious problem from reporting on the problem unless the team could identify the specific cause of the problem. Accordingly, GAGAS recognizes that simply bringing a serious problem to the attention of an agency is an important action.

GAGAS Section 6.73 expressly states that the finding elements identified in an audit depend on the objectives of that audit and that, per those objectives, the development of certain elements (such as the cause) may not be necessary. Pursuant to Section 6.73:

Auditors should plan and perform procedures to develop the elements of a finding necessary to address the audit objective. ...
The elements needed for a finding are related to the objectives of

the audit. Thus, a finding or set of findings is complete to the extent that the audit objectives are addressed and the report clearly relates those objectives to the elements of a finding. For example, an audit objective may be to determine the current status or condition of program operations or progress in implementing legislative requirements, and not the related cause or effect. In this situation, *developing the condition would address the audit objective and development of the other elements of a finding would not be necessary.* [Emphasis added.]

As noted above in the Discussion of Audit Results section of this report, DOT unsuccessfully attempted to make this same argument in a previous audit.⁵ In that audit, we informed the agency of the errors in its understanding and application of the relevant standards established by GAGAS. It is therefore particularly troubling that DOT nevertheless *repeats that same argument in this audit.* We urge that DOT contact the U.S. Government Accountability Office, as we regularly do, for guidance regarding these standards.

Concerning DOT's comment that "pothole data recording and counting is a highly manual and *subjective* process [emphasis added]," we note that DOT's idea that recording data about repaired potholes is a "subjective process" could be another cause of the data irregularities that we identified.

Nonetheless, we are pleased that DOT recognizes that it needs to "streamline the data entry process and reduce errors in pothole count reporting."

Insufficient Policies and Procedures for Tracking Pothole Repairs

DOT's written policies and procedures to guide its pothole repair efforts are insufficient. The only pothole repair procedures that DOT provided to us were an August 2004 document entitled *RRM Street Maintenance Pothole SOP* (Standard Operating Procedure) and a similar document entitled *RRM Arterial Maintenance Pothole SOP* (also dated August 2004). These documents presented procedures related to (a) arriving for work at the maintenance yards; (b) preparing equipment and assigning work; (c) calling in from assigned work locations and coffee breaks; (d) lunch time; and (e) returning to the yard at the end of the shift. However, they provide little guidance for ensuring that potholes are repaired in a timely manner. They do not explain how reports of potholes should be handled, how work orders should be generated, or how information about repaired potholes should be collected and recorded. The Division of Bridges informed us that it has no written pothole repair procedures.

Agency management is responsible for ensuring that effective policies and procedures are in place to help ensure that employees' practices are consistent with management's expectations and that agency objectives are being met. Clear policies and procedures on key tasks can provide the guidance necessary for staff to carry out their pothole repair responsibilities in a consistently efficient and effective manner.

⁵ *Audit Report on the Department of Transportation's Controls over the Use of Purchasing Cards* (MD15-095A), issued February 22, 2016.

Recommendation

8. DOT should prepare specific written policies and procedures that explain how reports of potholes should be handled, how work orders should be generated, and how information about repaired potholes should be collected and recorded by the Street Maintenance Unit, Arterial Maintenance Unit and Division of Bridges.

DOT Response: “DOT procedures for generating reports are documented; however, DOT will enhance its written procedures for work order generation and pothole recording. The PavementWorks system currently in development will include documented procedures and user guides for reporting work order generation and pothole repairs.”

DETAILED SCOPE AND METHODOLOGY

We conducted this performance audit in accordance with generally accepted government auditing standards. 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 objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. This audit was conducted in accordance with the audit responsibilities of the City Comptroller as set forth in Chapter 5, §93, of the New York City Charter. The scope of the audit was Fiscal Year 2015.

To obtain an understanding of DOT's pothole repair procedures, we requested and reviewed DOT's written procedures, guidelines and reports relating to pothole repairs. We also interviewed DOT personnel, including RRM's Deputy Commissioner, Director of Operations, Director of the Central Depot, and Director of Arterial Maintenance, along with many directors of Street Maintenance Administrative Offices and supervisors of Street and Arterial Maintenance Yards located throughout the five boroughs. In addition, we interviewed the Chief, Director, and Deputy Chief Engineer of Operations of the Division of Bridges. To obtain an understanding of FITS, we interviewed the Director of the Project Management Office and reviewed the FITS User Manual.

Based on these interviews and documents, we prepared a narrative of the steps in DOT's pothole repair process. We asked DOT officials to review the narrative and then met with them to obtain their comments on the narrative's accuracy.

We requested a list of potholes that were reported to DOT during Fiscal Year 2015. We received a FITS list with 146,866 lines of data, which represented 79,273 street defect numbers. We determined that 56,928 of the 79,273 street defect numbers related to DOT-repaired potholes.⁶ We assessed the reliability of the data on these 56,928 street defect numbers by searching for duplicates and by comparing the data to crew sheets prepared by pothole work crews on the number of potholes repaired relative to 76 systematically-selected street defect numbers. We then determined whether the repairs relating to the 56,928 street defect numbers had been completed in a timely manner.

In addition, to evaluate the reliability of the pothole repair data that DOT uses for the MMR, we randomly selected 15 work days and compared the repairs on the pothole work crew sheets to the daily summary reports on those repairs prepared by the borough offices. DOT's central office uses these daily summary reports to prepare monthly pothole repair reports for the MMR.

To obtain information about the claims filed with the City for property damage and personal injury resulting from potholes on City streets, highways and bridges, we reviewed a dataset provided by the Bureau of Law and Adjustment of the New York City Comptroller's Office on the claims filed with the City alleging property damage and personal injury relating to potholes during Fiscal Year 2015.

Although the results of our sampling tests were not statistically projected to their respective populations, these results, together with the results of our other audit procedures and tests, provide a reasonable basis for us to determine whether DOT adequately tracks its pothole repair efforts.

⁶ Other possible FITS outcomes include that the defects have been referred to other entities, such as the Department of Environmental Protection or utility companies, or that the defects have not been accessible or found.



Department of Transportation

POLLY TROTTEBERG, Commissioner

June 8, 2016

Ms. Marjorie Landa
Deputy Comptroller for Audit
Office of the New York City Comptroller
1 Centre Street, Room 11 00
New York, N.Y. 10007

Re: The New York City Comptroller's Draft Audit Report on the Department of Transportation's (DOT) Tracking of Pothole Repairs (ME15-11A)

Dear Ms. Landa:

Thank you for the opportunity to comment on the above-referenced Draft Audit Report. Attached, please find our response to each of the report recommendations for your consideration.

DOT is committed to ensuring the timely repair of New York City potholes and has a strong track record. The Department is always interested in ways to improve its operations, and is currently implementing new systems which will enhance current reporting of pothole repairs. Please extend our thanks to your staff for their time and effort on this assignment.

Best Regards,

A handwritten signature in cursive script that reads "Amy Hutner".

Amy Hutner
Auditor General
NYC Department of Transportation
212-839-4408.



Department of Transportation

POLLY TROTTEBERG, Commissioner

DOT Response to Comptroller's Audit on Tracking of Pothole Repairs

June 8, 2016

The New York City Department of Transportation ("DOT") welcomes the opportunity to provide comments in response to your draft "Audit Report on the Department of Transportation's Tracking of Pothole Repairs" (ME15-114A) (the "Report").

DOT is pleased with the opportunity to demonstrate the high standards with which it responds to pothole referrals. DOT is proud of its productivity and results in repairing potholes and resurfacing our streets, and we strive to perform the most durable roadway repairs in the most timely manner possible. Consider that:

- During the year, DOT typically fields a daily average of 18 crews and can dispatch as many as 75 crews to address pothole repair demand across the five boroughs, with arterials and bridges included.
- In Fiscal Year 2015, DOT repaired over 85 percent of pothole work orders within 15 days and over 98 percent within 30 days, closing out, on average, pothole work orders in under 6 days. DOT also resurfaced 1,019 lane miles of roadways citywide during that time period.
- In Fiscal Year 2016, we are on track to resurface over 1,200 lane miles citywide. In this timeframe, DOT repaired over 88 percent of pothole work orders within 15 days, closing out, on average, pothole work orders in less than 4 days.
- In Fiscal Year 2017 our in-house resurfacing target will increase to a record 1,300 lane miles.
- In calendar year 2016 thus far, we repaired over 150,000 potholes citywide, a substantial decrease to over 300,000 potholes repaired citywide by early June 2015 and over 350,000 repaired by early June 2014.

Fewer potholes and better roadways is the result of our continued repaving efforts in the five boroughs thanks to Mayor de Blasio's commitment of \$1.6 billion to resurface roads all over the city over the next decade.

DOT's performance level during the period of the audit in 2015 marks a significant improvement since the Comptroller's prior audits of DOT's pothole referral responses, conducted by your office in 2002 and 2005. However, DOT recognizes more can be done. To further improve internal processes, DOT is upgrading its current pothole tracking system with a more modern, comprehensive electronic system.

Below are DOT's comments to each of the Report recommendation:

Recommendation 1: "DOT should require that its Arterial Maintenance Unit and Division of Bridges record date and source of each pothole referral they receive in order to monitor the timeliness of their pothole repair efforts."



Department of Transportation

POLLY TROTTEBERG, Commissioner

Agency Response: DOT's Arterial Maintenance and Bridges Units track pothole repair counts and locations in their respective systems; however, the referral sources and response times are tracked in a separate system known as Siebel (311). The data for Fiscal Year 2015 from both of these systems were made available to the auditors. Since the timeliness of pothole repairs are tracked, DOT cannot agree with the finding.

Recommendation 2: "DOT should revise its timeliness goal for pothole repairs from 30 to 15 days in an enhanced effort to limit the City's legal liability in this area and to increase the safety of the City's roadways."

Agency Response: DOT recognizes that potholes are a road hazard and should be addressed promptly; however, it prioritizes work based upon public safety.

DOT prioritizes pothole repairs in an efficient and productive manner while promptly addressing potholes which present the highest safety risk such as those located on high traffic roadways and those with the most severe defects. DOT often groups work geographically to allow the work crews to increase work time and decrease their travel time. This approach increases productivity and overall effectiveness of the pothole repair program. Prioritizing work solely by the date of referral could potentially leave potholes in high priority locations unrepaired for longer time and lead to a loss of efficiency of DOT work crews. For these reasons, DOT continues to use the historic 30 day measure for pothole repair work; however, as indicated in the Report, DOT repairs the great majority of potholes well within such period. Typically, repairs performed beyond 30 days are special cases involving multiple divisions within DOT or other agencies.

Recommendation 3: "DOT should enhance its efforts to complete all pothole repairs within 15 days."

Agency Response: Although Recommendation 3 states that DOT should enhance its effort to complete all pothole repairs within 15 days, the data indicates that DOT repairs the overwhelming majority (over 85%) of pothole complaints within such 15 days. The audit finding is misleading since it is exception-based¹ and implies that the exceptions are characteristic of the entire work load. If the Report included the actual numbers of timely pothole repairs compared to the total number of repairs, DOT's performance would be put in its proper context and clearly show the effectiveness of DOT's program.

¹ The detailed methodology section makes no reference to the exception-based reporting method used. While this type of reporting can be useful in highlighting the errors, it is not a measure of overall performance, and should not be reported in isolation.



Department of Transportation

POLLY TROTTENBERG, Commissioner

DOT's Bridges Unit repaired 4,659 potholes in Fiscal Year 2015. Most of those were self identified and repaired in one business day.

Recommendation 4: "DOT should review its pothole repair operations to determine whether there are steps taken by the Queens Street Maintenance Yard that could be used in the other boroughs, especially in Staten Island and Brooklyn, to improve the timeliness of pothole repairs."

Agency Response: DOT is always looking for ways to improve operations and we hold regular meetings to share its successes. We recognize that in Fiscal Year 2015, Queens was a leader in timeliness of pothole repairs.

Recommendation 5: "DOT should ensure that it does not double or triple count the potholes it has repaired in relation to individual street defect numbers in its FITS tracking of the agency's pothole repair efforts."

Agency Response: DOT recognizes that the FITS database has shortcomings with respect to the recording of pothole repair counts. To ensure more accurate reporting, DOT does not rely on FITS for these counts, but it utilizes an offline system for pothole repair counts. Therefore, questioning the reliability of FITS data for this purpose is misplaced.

Although the Report states that some potholes were double or triple counted, it is clear that the auditors misunderstood the meaning of the data. The perceived double and triple counts are not of potholes repaired, but of repair actions. They actually reflect instances where a defect/pothole required multiple actions (i.e. the same location with separate repairs). It should also be noted that these instances constitute a small number of overall pothole work order efforts. In the majority of cases actual work was expended and is accurately reflected in the separate offline system for pothole repair counts.

Recommendation 6: "DOT should take steps to ensure that FITS data corresponds with crew sheet data."

Agency Response: DOT is working on improvements to its system and is in the process of developing a new pothole defect management system (PavementWorks), which will be rolled out in early Fiscal Year 2017. During the on-going rigorous development process of PavementWorks, DOT is addressing issues such as transcription errors, system errors and assignment overlaps. PavementWorks will reduce these types of errors by streamlining data entry and defect assignment processes.

Recommendation 7: "DOT should ensure that the daily borough summary reports of repaired potholes, upon which the monthly reports for the MMR are based, are consistent with the numbers of repaired potholes reflected on the crew sheets."



Department of Transportation

POLLY TROTTEBERG, Commissioner

Agency Response: DOT acknowledges that there were minor inaccuracies in the pothole repair data that was analyzed for the related finding. However, the methodology used to reach this finding appears flawed and inconsistent with select provisions of Generally Accepted Government Audit Standards (GAGAS). Therefore, the resultant finding is not reliable.

Specifically, the methodology used to count errors is not appropriate, since it was based on the gross value (absolute value) in analyzing the discrepancies over the 15 days sampled. The appropriate analysis should have used the net value rather than absolute value of inconsistencies of daily pothole repair counts, since the cumulative value is the reported figure in the MMR. The errors reported are neither consistent with nor applicable to this metric. When applying the net value methodology, the resultant error rate drops to below 2%. This fundamentally alters the Report's finding that the MMR data is of questionable reliability, since a 2% error rate provides reasonable assurance that the data is accurate and counter to the implication that DOT is over-reporting the number of pothole repairs. As presented, this is another example of exception-based reporting.

In addition, the auditors did not consider all the evidence provided by DOT. Pursuant to the Comptroller's Office request, DOT provided 21 days of crew sheets with over 200 individual pothole records. However, the auditors truncated their review of the sample size to 15 days. Also, the results reported appear to limit the data even further, by including only Street Maintenance pothole repair counts. This is inconsistent with Section 6.56 of Generally Accepted Government Audit Standards, which states:

"Auditors must obtain sufficient, appropriate evidence to provide a reasonable basis for their findings and conclusions."

By only reporting on 15 out of the 21 days sampled, and apparently excluding Arterial Maintenance and Bridges data, the sufficiency audit standard is not met. In addition, at no point during the audit did the auditors interview any DOT Performance Analysis and Reporting (PAR) unit staff on the agency policies for MMR reporting. Had they done so, they would have learned that DOT uses the cumulative value in preparing the MMR pothole repair metric. Consequently, the report conclusions are inaccurate.

In this report, the auditors used a judgmental sample to draw conclusions about data in the MMR. Since this was not a representative sample, it is not sufficient in size to provide a reasonable basis for this finding. The audit sample used in this analysis was 24,457 potholes, or 5% of the 460,493 potholes reported in the MMR for Fiscal Year 2015.



Department of Transportation

POLLY TROTTEBERG, Commissioner

It should be noted that contrary to government audit standards related to the four elements of a finding, this finding does not mention the underlying cause of the discrepancies identified.² Pothole data recording and counting is a highly manual and subjective process, especially during peak pothole season. The PavementWorks system will streamline the data entry process and reduce errors in pothole count reporting.

Recommendation 8: "DOT should prepare specific written policies and procedures that explain how reports of potholes should be handled, how work orders should be generated, and how information about repaired potholes should be collected and recorded by the Street Maintenance Unit, Arterial Maintenance Unit, and Division of Bridges."

Agency Response: DOT procedures for generating reports are documented; however, DOT will enhance its written procedures for work order generation and pothole recording. The Pavement/works system currently in development will include documented procedures and user guides for reporting work order generation and pothole repairs.

We would like to extend our thanks to the audit staff on this assignment. We will continue to look for ways to enhance the effectiveness and efficiency of the pothole repair program.

² Section 6.73 of GAGAS, states that: "Auditors should plan and perform procedures to develop the elements of a finding necessary to address the audit objectives." Section 6.76 Cause: "The cause identifies the reason or explanation of the condition or the factor or factors responsible for the difference between the situation which exists (condition) and the required or desired state (criteria) which may also serve as the basis for recommendations for corrective actions."