OFFICE OF THE NEW YORK STATE COMPTROLLER

DIVISION OF STATE GOVERNMENT ACCOUNTABILITY

Department of Transportation

Management and Oversight of Structural Defects on Highway Bridges

Report 2008-S-102

Thomas P. DiNapoli

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State of New York
Office of the State Comptroller

Division of State Government Accountability

January 12, 2010

Stanley Gee
Acting Commissioner
New York State Department of Transportation
50 Wolf Road
Albany, NY 12232

Dear Commissioner Gee:

The Office of the State Comptroller is committed to helping State agencies, public authorities and local government agencies manage government resources efficiently and effectively and, by so doing, providing accountability for tax dollars spent to support government operations. The Comptroller oversees the fiscal affairs of State agencies, public authorities and local government agencies, as well as their compliance with relevant statutes and their observance of good business practices. This fiscal oversight is accomplished, in part, through our audits, which identify opportunities for improving operations. Audits can also identify strategies for reducing costs and strengthening controls that are intended to safeguard assets.

Following is a report of our audit of Management and Oversight of Structural Defects on Highway Bridges at the Department of Transportation. This audit was performed pursuant to the State Comptroller's authority as set forth in Article V, Section 1, of the State Constitution and Article II, Section 8, of the State Finance Law.

This audit's results and recommendations are resources for you to use in effectively managing your operations and in meeting the expectations of taxpayers. If you have any questions about this report, please feel free to contact us.

Respectfully submitted,

Office of the State Comptroller
Division of State Government Accountability

EXECUTIVE SUMMARY

Audit Objective

Our objective was to determine whether serious structural defects on highway bridges are repaired or otherwise addressed within the time frames required by the Department of Transportation.

Audit Results - Summary

The Department of Transportation (Department) is responsible for monitoring the condition of highway bridges in New York State. It has developed inspection requirements for the bridges and a process for ensuring that critical inspection findings are addressed in a timely manner. It is also responsible for the inspections of all State and locally-owned bridges.

If a serious ("red flag") structural defect is identified during an inspection, the bridge owner (usually a municipality or State agency) must be notified within seven work days. The owner then has six weeks in which to take appropriate action (i.e., close the bridge, repair the defect, or take alternative action to ensure that the bridge is safe to use). Any repairs and most alternative actions must be approved by a licensed professional engineer.

Between January 1, 2006 and June 24, 2008, a total of 1,280 red flag defects were identified on 228 State and 495 locally-owned highway bridges. To determine whether these defects were addressed within the required time frame of about seven weeks, we reviewed the records relating to a sample of 204 of the defects which pertain to 44 State and 74 locally owned bridges.

We found that 69 of the 204 defects (33.8 percent) pertaining to 25 State and 16 locally owned bridges were not addressed within the required time frame. In fact, it took, on average, more than 17 weeks to address these 69 defects (i.e., more than 17 weeks to either close the bridge, repair the defect, or take alternative action to ensure that the bridge was safe to use). The delays were especially long in the Binghamton and Buffalo regions, where it took, on average, more than seven months for 18 red flag defects to be addressed. As the Department uses red flags to identify the failure or potentially imminent failure of a critical primary structural component, addressing the defects in a timely manner is an important public safety concern.

According to Department officials, such delays are often caused by a lack of funding for bridge repairs, an inability to develop appropriate repair plans quickly, disagreement over the need for the repairs, and disagreement over who is responsible for making the repairs. We also determined that

the Department's regional offices are sometimes slow to notify bridge owners about defects and do not always follow up with bridge owners when their six-week deadline is approaching.

Moreover, the Department was sometimes slow to notify bridge owners about certain kinds of especially serious red flag defects. In such cases, the bridge owner is supposed to be notified immediately and appropriate interim action is supposed to be decided on within 24 hours of notification. However, our review of one serious red flag defect showed the bridge owner was not notified until five days had passed. For five other serious defects the Department could not provide documentation that this notice occurred within 24 hours. We recommend the Department develop an action plan to address the causes for delays in addressing red flag defects.

We also found that, in many instances, important bridge-related documentation was missing from the Department's files. For example, in some instances there was no documentation of written notification to the owner that a structural defect had to be addressed. We also noted that documentation regarding the corrective action or protective action taken was missing from certain of the files. Such information is important because it serves as evidence that the condition is being addressed. In addition, the information on the Department's automated flag monitoring system was not always accurate and complete. We further found that additional actions are needed to ensure that engineering certifications on bridge projects are provided by individuals with current New York State engineering licenses.

Our report contains 11 recommendations for strengthening the Department's oversight of the actions taken in addressing red flag structural defects on State and locally-owned highway bridges.

This report dated, January 12, 2010, is available on our website at: http://www.osc.state.ny.us.
Add or update your mailing list address by contacting us at: (518) 474-3271 or
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Introduction

Background

The Department of Transportation is responsible for monitoring the condition of highway bridges in New York State. It has developed detailed inspection requirements for these bridges and a process for ensuring that critical inspection findings are addressed in a timely manner. It also maintains a bridge inventory database that contains the inspection results for each bridge.

According to this database, in 2008, New York State had a total of 17,403 highway bridges, of which 7,535 were owned by the State, 8,931 were owned by localities, and 937 were owned by public authorities. The Department is responsible for inspecting all State and locally-owned bridges, while the public authorities are responsible for inspecting their bridges and reporting the inspection results to the Department. The Department either uses its own engineering staff to perform its bridge inspections or contracts with engineering firms.

The inspection and follow-up requirements for highway bridges are contained in the State Highway Law as well as the Department's Bridge Inspection Manual. The requirements are consistent with the National Bridge Inspection Standards developed by the Federal Highway Administration.

According to the requirements in the Department's Bridge Inspection Manual, highway bridges generally have to be inspected at least once every 24 months, though shorter intervals may be required for some bridges on the basis of their age, traffic characteristics and known deficiencies. The actual inspections themselves are to be performed in accordance with procedures specified in the Manual.

If a serious structural defect is identified during an inspection, the bridge owner must be notified promptly. The owner is then required to take appropriate corrective and/or protective action. For example, the owner may make repairs to correct the structural defect, after temporarily closing the bridge or limiting the weight allowed on the bridge to provide protection until the repairs are completed.

According to the Department's requirements, the bridge owner generally must receive written notification of the structural defect within seven work days of the inspection. The bridge owner then has six weeks (42 days) in which to address the defect. The bridge owner may address the defect by either closing the bridge, repairing the defect, or taking alternative action to ensure that the bridge is safe to use. Common alternative actions include

closing one or more traffic lanes to limit the amount of weight borne by the bridge or posting a sign limiting the weight of the vehicles allowed on the bridge.

The bridge owner must provide the Department with a written description of the actions that will be taken to address the defect, and in most instances, show that the actions have been approved by a licensed professional engineer (any repairs and most alternative actions require an engineer's approval). This written description may be provided before or after the actions are completed, but must be provided by the end of the six-week period. In addition, when the actions have been completed, a licensed professional engineer must certify that the defect has been appropriately addressed.

If the actions cannot be completed within this six-week period, the bridge may still be used if it is certified as safe in the interim by a licensed professional engineer. However, this certification must be provided to the Department by the end of the six-week period.

If the structural defect is so serious that immediate attention is needed, the bridge owner is to be notified immediately and a course of action (called Prompt Interim Action) is to be decided on within 24 hours. In addition, the Department may close any bridge that is determined to be unsafe, at any time, regardless of the actions being taken by the owner. Thus, while the Department cannot compel bridge owners to make repairs, it can close any bridges that are determined to be unsafe.

Serious structural defects are classified as "red flag" conditions by the Department. According to the Department's Bridge Inspection Manual, such conditions either pose a clear and present danger or, if they are left unattended for an extended period, they will likely become a clear and present danger. They represent the failure or potentially imminent failure of critical primary structural components ("potentially imminent" means that a failure is likely before the next scheduled inspection).

Less serious safety defects may also be identified during inspections, and are classified as either "yellow flag" or "safety flag" conditions. A yellow flag condition is defined as a potentially hazardous condition which, if left unattended beyond the next anticipated inspection, would likely become a clear and present danger. It may also represent the actual or imminent failure of a non-critical structural component, where such failure might reduce the reserve capacity or redundancy of the bridge, but would not result in a structural failure presenting a clear and present danger. A safety flag condition is defined as a condition presenting a clear and present danger to vehicle or pedestrian traffic, but no danger of structural failure or collapse.

The Department has an electronic information system that tracks the status of all red, yellow and safety flag conditions (the Flag Tracking and Monitoring System). For each condition, the System shows the date the condition was identified, the date the bridge owner was notified about the condition, and the date the bridge owner reported that the corrective and/or protective actions were completed. The System also shows whether the condition was permanently, or only temporarily, addressed (e.g., whether the bridge was repaired and the serious structural defect corrected, or whether the bridge was partially closed until the defect could be corrected at a later date). The System is intended to help Department officials monitor the condition of highway bridges and ensure that unsafe conditions are addressed in a timely manner.

According to the information on the System, between January 1, 2006 and June 24, 2008, a total of 1,280 red flag, 3,853 yellow flag, and 5,561 safety flag conditions were identified on State and locally-owned highway bridges (the System does not contain information about defects on public authority bridges). Our audit focuses on red flag conditions, and the System showed that 438 of the 1,280 red flag conditions were found on State-owned bridges (34 percent) and 842 were found on locally-owned bridges (66 percent). These red flag conditions were found on 228 State-owned bridges and 495 locally-owned bridges.

The Department divides the State into 11 regions for administrative purposes and has an office in each region. Each regional office is responsible for the inspections of the State and locally-owned bridges in that region, and for notifying the bridge owners when red flag conditions are identified on those bridges. They are also responsible for receiving the bridge owners' reports of their corrective and/or protective actions, and for following up with the owners when the actions do not appear to be sufficient or the reports are not received on time. Information related to these activities on the Department's Flag Tracking and Monitoring System is entered by the regional offices.

In 2008, the Department's bridge inventory database showed the number of bridges within the regional offices as follows:

Region	Bridge Ownership			Total
	New York State	Localities	Public Authorities	
1 – Albany	820	822	84	1,726
2 – Utica	491	694	107	1,292
3 – Syracuse	596	633	62	1,291
4 – Rochester	759	649	78	1,486
5 – Buffalo	802	1,173	224	2,199
6 – Hornell	624	1,032	0	1,656
7 – Watertown	410	762	8	1,180
8 – Poughkeepsie	1,062	1,244	205	2,511
9 – Binghamton	832	1,097	0	1,929
10 – Hauppauge	532	155	1	688
11 – New York City	607	670	168	1,445
Totals	7,535	8,931	937	17,403

Most State-owned bridges are operated and maintained by the Department (some are maintained by other State agencies, such as the Office of Parks, Recreation and Historic Preservation). Accordingly, when Department inspections identify red flag conditions on State-owned bridges, regional office officials usually must notify and work with other officials in the same Department regional office. The locally-owned bridges are owned by counties, towns, cities, other municipalities, and certain other entities (such as private railroads.)

The bridges owned by public authorities must abide by the Department's inspection and follow-up requirements. However, the Department does not actively track the actions taken by the public authorities in addressing the unsafe conditions that are identified during their bridge inspections. Rather, the public authorities are expected to track these follow-up actions themselves and ensure that any red flag conditions are addressed in accordance with the Department's requirements. To determine whether the public authorities were following the Department's Inspection Manual and issuing red structural flags and addressing them within the seven weeks time frame, we interviewed officials from three public authorities that own 900 of the 937 public authority bridges. We determined that they had incorporated the Department's manual as part of their procedures and maintained files that demonstrated they were inspecting the highway bridges. We also learned that one of the three authorities does not issue red flags, but reportedly immediately addresses bridge safety issues that would be red flagged under Department criteria.

Audit Scope and Methodology

We audited to determine whether serious structural defects on highway bridges are repaired or otherwise addressed within the time frames required by the Department for the period January 1, 2006 through September 17, 2008. To accomplish our objective, we interviewed Department officials and staff, and we reviewed the Department's records and documents, Bridge Inspection Manual, Flag Tracking and Monitoring System, and bridge inventory database. In our review of Department documents, we reviewed the bridge files maintained at the four regions we visited.

We also interviewed officials at the Metropolitan Transportation Authority, Port Authority of New York and New Jersey, and New York State Thruway Authority to learn about their procedures for tracking flagged conditions on their bridges. We did not test their practices to determine whether they were following their procedures.

We conducted our 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.

In addition to being the State Auditor, the Comptroller performs certain other constitutionally and statutorily mandated duties as the chief fiscal officer of New York State. These include operating the State's accounting system; preparing the State's financial statements; and approving State contracts, refunds and other payments. In addition, the Comptroller appoints members to certain boards, commissions and public authorities, some of whom have minority voting rights. These duties may be considered management functions for the purposes of evaluating organizational independence under generally accepted government auditing standards. In our opinion, these functions do not affect our ability to conduct independent audits of program performance.

Authority

We performed this audit pursuant to the State Comptroller's authority as set forth in Article V, Section 1, of the State Constitution and Article II, Section 8, of the State Finance Law.

Reporting Requirements

We provided a draft copy of this report to Department officials for their review and comment. We have considered their comments in preparing this audit report. Department officials indicated that some of our recommendations address processes already in place. They provided details regarding the actions they have taken to implement several of our recommendations. A copy of the Department's response is attached to this

report. State Comptroller's comments to their response are also attached at the end of this report.

Within 90 days after final release of this report, as required by Section 170 of the Executive Law, the Commissioner of the Department of Transportation shall report to the Governor, the State Comptroller, and the leaders of the Legislature and fiscal committees, advising what steps were taken to implement the recommendations contained herein, and where recommendations were not implemented, the reasons why.

Contributors to the Report

Major contributors to this report were Carmen Maldonado, Gerald Tysiak, Roger Mazula, Wayne Bolton, Bruce Brimmer, Michele Turmel, Elizabeth Norniella, Abe Fish, and Dana Newhouse.

Audit Findings and Recommendations

Timeliness of Actions Taken

Between January 1, 2006 and June 24, 2008, a total of 1,280 red flag conditions were identified on State and locally-owned highway bridges. As is shown in the following table, these serious structural defects were identified on bridges in all eleven regions of the State:

Red Flag Conditions Identified Between January 1, 2006 and June 24, 2008

Region	On State-Owned Bridges	On Locally-Owned Bridges	Total
1 – Albany	18	31	49
2 – Utica	20	89	109
3 – Syracuse	15	35	50
4 – Rochester	82	65	147
5 – Buffalo	84	171	255
6 – Hornell	17	133	150
7 – Watertown	6	38	44
8 – Poughkeepsie	11	29	40
9 – Binghamton	51	188	239
10 – Hauppauge	25	9	34
11 – New York City	109	54	163
Total	438	842	1,280

Generally, such defects should be addressed within seven weeks of when they are identified (i.e., one week for the Department to notify the bridge owner about the defect and six weeks for the bridge owner to complete the corrective and/or protective actions). This seven-week period is approximate (e.g., slightly less than seven weeks would be needed if the bridge owner was notified of the defect within three days of the inspection, and slightly more than seven weeks would be needed if the Department took the full seven work days allowed to notify the bridge owner), but it is a good indicator of whether corrective actions are timely and it is the metric that is used by the Department for its monitoring.

Furthermore, the Department's Bridge Inspection Manual requires that every bridge in the State requiring inspection under the Uniform Code of Bridge Inspection must have a folder identified with the bridge identification number (BIN). These BIN folders contain inspection reports and pertinent correspondence. The folders for State and local bridges are kept at the Department's Regional Offices responsible for bridges in their area. The Flagging Procedures require that all flag reports and correspondence be placed in the folder. This includes documentation related to the notification

of the responsible party of the flagged conditions as well as the responsible party's written response certifying that corrective or protective measures have been taken.

The bridge owner may address a defect by closing the bridge, repairing the defect, or taking alternative action to ensure that the bridge is safe to use. To determine whether defects are being addressed within seven weeks of when they are identified, we reviewed regional office documentation for a sample of 204 of the 1,280 defects. We selected our sample from four of the 11 regions, judgmentally selecting four of the five regions with the greatest number of red flag structural defects during the period: Buffalo (255), Binghamton (239), New York City (163), and Rochester (147). At each region, we selected 30 red flag defects on 30 different bridges; judgmentally selecting a representative mixture of both bridges (State and local) and defects.

Our sample at each region that we selected was expanded to include the bridge with the most red flag structural defects. For example, we included all 36 red flag defects for one of the bridges in the New York City region and all 28 red flag defects for one of the bridges in the Buffalo region. In total, we selected 58 red flag defects from the Buffalo region, 44 from the Binghamton region, 66 from the New York City region and 36 from the Rochester region.

We then reviewed the regional office documentation for each defect to determine whether the defect had been addressed within seven weeks (49 days) of being identified. For example, we reviewed the inspection report indicating the date the defect was identified; the letter from the regional office notifying the bridge owner of the defect; the letter from the bridge owner describing the corrective and/or protective actions that would be, or were, taken to address the defect; and the engineer's certification, after the defect was addressed, stating that the bridge was safe to use.

We found that 123 of the 204 defects (60.3 percent) were addressed within seven weeks. However, 69 of the defects (33.8 percent) were not addressed within this time frame. In fact, it had taken an average of more than 17 weeks to address these 69 defects (i.e., more than 17 weeks to either close the bridge, repair the defect, or take alternative action to ensure that the bridge was safe to use). The time taken to address the remaining 12 defects (5.9 percent) could not be determined because of a lack of documentation.

The results of our review are summarized in the following table:

Region	Defects Addressed Within 7 Weeks	Average Number of Weeks Taken	Defects Not Addressed Within 7 Weeks	Average Number of Weeks Taken	Defects Where Time Not Determined	Total Reviewed
Binghamton	32	.8	7	29.2	5	44
Buffalo	45	1.3	11	29.7	2	58
New York	27	2.7	39	13.1	0	66
Rochester	19	2.9	12	14.5	5	36
Totals	123	1.7	69	17.6	12	204

Thus, about one-third of the serious structural defects in our sample were not addressed within the required seven-week time frame. The delays were especially long in the Binghamton and Buffalo regions, where it took, on average, more than seven months for these defects to be addressed.

According to regional officials, such delays are often caused by a lack funding for bridge repairs, an inability to obtain repair plans quickly from licensed professional engineers, disagreement over the need for the repairs, and disagreement over who is responsible for making the repairs.

In addition, Department officials believe that one of the bridges in our sample (the Gowanus Bridge in New York City) is a special case. We reviewed Department documentation for all 36 red flag defects on this bridge and found that 29 were not addressed within seven weeks. The Department owns the bridge and has a long-term construction contract whereby the contractor is responsible for inspecting the bridge, identifying defects, and making repairs. As a result, Department officials believe the bridge is in "construction" status and not subject to the normal seven-week time frame. Department officials also advised us that the contractor should have documentation in the construction files, but this may not get into BIN file until end of project.

Since the Gowanus continues to be used during construction, the Department should have a file showing the status of each of the red flags issued during construction and the seven-week time frame should apply for all conditions.

We also found that the Department is sometimes slow to notify the bridge owners about the defects. The Department is supposed to provide this initial notification within seven work days of when the defects are identified. However, according to our sample results, the Department was late in providing this notification for 33 of the 204 flags reviewed. In these instances, it took the Department an average of 23.7 days, and as long as 107 days, to notify the bridge owners about the defects. When the initial

notification is delayed, it is all the more difficult to meet the seven-week time frame for appropriate action.

Department procedures also require the regional offices to send bridge owners a written notice, reminding them of their six-week deadline for completing corrective and/or protective actions, if the owners have not submitted a written description of these actions within five weeks of being notified about a red flag defect. Such notices can help to reduce delays in the bridge owners' responses. However, we found that the Department is sometimes late in sending these reminder notices and often does not send them at all. For example, based on our sample results, for 64 red flag defects, no reminder notices were sent to bridge owners with overdue written responses and for 5 red flags, the reminder was sent but not until as many as 11 weeks after the bridge owner was notified about flag defect.

The Department is also slow, in some cases, to notify bridge owners when Prompt Interim Action is required because especially serious red flag defects have been identified. In these cases, the bridge owner is supposed to be notified immediately and appropriate interim protective/corrective action is supposed to be decided on within 24 hours of notification (in most cases, the bridge owner still has the standard six weeks to fully address the defect). Based on our sample results, for one PIA, the notification occurred five days after it was identified and for five others, the Department could not provide documentation that this notice occurred within 24 hours.

As was previously noted, for 12 of the defects in our sample, some of the required documentation was missing (in particular, the written response from the bridge owner certifying that corrective and/or protective actions had been taken), and as a result, it could not be determined how long it had taken to address these 12 defects. The regional offices are explicitly required by the Department's Bridge Inspection Manual to keep all bridge-related documentation in the designated bridge files. In the absence of this documentation, the regional offices are less able to monitor the status of the bridge owners' actions and there is less assurance the defects have, in fact, been addressed as required. We recommend the Department conduct random audits of these files to ensure that they are being maintained as required.

We also note that, when we initially performed our review, a good deal of other required documentation was also missing from the regional offices' bridge files. Department officials eventually located most of this other documentation, but the documentation should have been in the bridge files so that it would be available for the Department's monitoring purposes.

Recommendations

1. Develop an action plan to address the causes for delays in addressing red flag defects in the various regions. As part of this plan, remind the regional offices of the need to provide timely notifications to bridge owners when red flag defects are identified; specifically, to (a) provide the initial notification within the required seven-day period, (b) send reminder notices when the six-week deadline is approaching, and (c) provide immediate notification when Prompt Interim Action is needed.

2. Monitor the performance of the regional offices in meeting red flag defect reporting requirements and take corrective actions when the notifications are not timely.

   (Department officials responded that steps already have been or will be taken to implement recommendations Number 1 and Number 2.)

3. Monitor the actions taken in addressing red flag defects on the Gowanus Bridge. If the seven-week time frame is not appropriate for bridges in construction status, develop an appropriate time frame for such bridges and monitor against that time frame.

   (Department officials responded that the Gowanus Bridge is exempt from Department flagging procedures because the contractor is responsible for red flag repairs. However, officials indicated that measures have been taken to ensure appropriate flagging documentation is contained in Department files.)

   Auditor's Comments: We are pleased that Department officials have taken corrective action to ensure appropriate documentation.

4. Conduct random audits of the regional offices' bridge files to determine whether all the required documentation is being kept in the files, and take corrective action when documentation practices do not comply with the requirements.

   (Department officials responded that the recommendation will be implemented.)

Verification of Engineering Credentials

When a red flag defect is identified on a highway bridge, the corrective and/or protective actions proposed by the bridge owner usually must be approved by a licensed professional engineer. This approval is intended to provide assurance the actions will be appropriate. When the actions have been completed, the safety of the bridge must be certified by a licensed professional engineer. In addition, if the completion of the corrective actions is deferred beyond the standard six-week response period, the bridge must be certified as safe in the interim by a licensed professional engineer (unless the bridge is closed or a sign is posted limiting the weight allowed on the bridge).

To determine whether the approval/certification of a licensed professional engineer was being obtained, we reviewed the appropriate regional office documentation for our sample of 204 red flag defects. As was previously noted, there was no documentation of corrective and/or protective action for 12 of the defects. Accordingly, they were excluded from this particular review. In addition, an engineer's certification was not needed for 30 of the defects, since the bridge was either closed or a sign was posted limiting the weight allowed on the bridge.

For the remaining 162 red flag defects, we found that the corrective and/or protective actions were certified. However, it was not always clear that the certification had been provided by a licensed professional engineer.

The corrective and/or protective actions were certified by 28 different individuals. The individuals were identified as professional engineers, but only 11 of the 28 provided their Professional Engineering License Number or stamped the response with their seal and signed their name over the seal, which is the accepted engineering industry practice. As a result, there was no documentation containing evidence (e.g. license numbers, stamp seal) the other 17 individuals were actually licensed professional engineers.

In response to our findings, Department officials told us that they have instructed the regional offices to require the Professional Engineering License Number or stamped seal when actions are certified by engineers.

We also checked the State Education Department's Office of the Professions Online Verification Website for the 28 engineers in our sample to determine if the individuals had active professional engineering licenses in New York State, as required by the Department. We found the name and license number for all 11 individuals who provided a license number on their certifications. For 16 of the remaining 17 individuals, we were able to find a name that matched, but could not verify that it was the same person. For the remaining individual, we found no matching name. We recommend the Department verify the credentials of these 17 individuals and periodically perform such verifications.

Regional office officials told us that they do not verify the engineers' credentials because, for the most part, they know the individuals making the certifications. Department officials also noted that engineers' credentials are verified when they work on bridges owned by the Department. However, we note that many of the bridges in the State are owned by localities, and in these cases, the credentials of the engineers may not always be verified. Subsequent to our audit, the Department verified the credentials for 15 of these 17 individuals.

Recommendations

5. Monitor regional office compliance with the requirement that the Professional Engineering License Number or stamped seal is provided when actions are certified by engineers.

6. Verify the engineering credentials of the 17 individuals in our sample and periodically perform such verifications in the future, especially for bridges owned by localities.

(Department officials replied that recommendations Number 5 and Number 6 were implemented.)

Data Completeness and Reliability

In January 2006, the regional offices were required to start using the Department's automated Flag Tracking and Monitoring System (System). Information about bridge defects is entered manually on the System by regional office staff or imported electronically using the Department's bridge inspection software.

The System's database should include every defect that has been identified. To determine whether the database was complete, we traced all the red flag defects that were issued through the inspection software during the period January 1, 2006 through June 24, 2008 to the database. We found that the database contained 1,280 red flag defects that had been issued from the inspection software. We did not verify the manually entered defects.

The System's database must be complete and accurate to be reliable. However, we identified numerous instances in which the database was neither complete nor accurate. For example:

- For 310 of the 1,280 red flag defects identified during our audit period, there was no date indicating when the bridge owner was notified about the defect. In addition, in 12 instances, the notification date preceded the date the defect was identified.
- In 14 instances, the date of corrective action was either blank or prior to the date the defect was identified.
- In 32 instances, the date of the bridge owner's written response preceded the date the defect was identified.
- In 64 instances, the response date was recorded, but the date of notification was not recorded.
- For 79 of the 165 defects requiring Prompt Interim Action, the date of notification was not recorded, and in two instances, the date of notification preceded the date the defect was identified.

We also identified data entry errors when we compared the regional office documentation to the information on the database for the 204 defects in our sample. In fact, we found that 125 of the 204 database records contained at least one discrepancy in dates when compared to the documentation in the bridge files. Department officials told us that the database program gives them only limited ability to include edit checks to ensure data entry is complete and accurate. The officials said a new database system is being designed, and this new system should include better data entry edit checks.

In addition, at the regional offices we visited, we observed inconsistencies in data entry practices. For example, regional office staff did not consistently use the date of the response letter when entering the response date into the database. Sometimes it was the date the letter was received and other times it was a later date, such as the date when data was entered. Similarly, the date that was entered for the corrective action was sometimes much later than when the documentation certified that the action was completed.

For example, in one case, the bridge owner certified that a temporary repair was made, and the bridge was safe, on November 30, 2006. However, according to the database, this was not done until February 26, 2007. In another case, the bridge owner provided a written certification dated September 17, 2007 indicating that a defect had been corrected. However, according to the database, this was not done until January 28, 2008.

We note that the Department has not provided the regional offices with written procedures on the data entry process. We recommend such procedures be developed.

Even when the dates of the bridge owner's actions are accurately entered on the System, the dates cannot always be used to determine whether the actions were timely. This is because the date of the most recent action is the only date that is shown. If there were earlier protective or corrective actions, the dates of those actions are not shown. Rather, they are deleted and replaced by the date of the most recent action.

Department officials state that they use the System to monitor the current status of the defects, not the work history. However, we believe the Department's monitoring capabilities would be enhanced if important events, such as earlier corrective actions, were retained on the System rather than deleted. We recommend the Department's new database system retain such dates.

Recommendations

7. Ensure that the new database system edits include, but are not limited to:

- Checks for valid data entry
- Reliability of all corrective and/or protective actions.

(Department officials replied to our draft audit report that a new software system (known as "Bridge Data Interface System" or "BDIS") is in development and is expected to replace the current inspection software in 2012. They indicated they will make every effort to improve the reliability of the data collected using advanced features that can be incorporated into the program such as cross checks for valid data entry. The new system will also monitor the flag data requiring a response within a specified time and notify users if a response is not received.)

8. Periodically compare the hard copy documentation in the bridge files to the data on the system to verify its accuracy.

   (Department officials replied to our draft report that the quality assurance reviews will incorporate activities to implement this recommendation.)

9. Develop written procedures for entering data on the Flag Tracking and Monitoring System (and the new database system, when it is developed), and provide training to regional office staff in these procedures.

   (Department officials replied to our draft audit report this recommendation was implemented.)

Public Authority Bridges

The highway bridges owned by public authorities are subject to the same inspection and follow-up requirements as the bridges owned by the State and localities. However, each public authority is responsible for inspecting its own bridges, appropriately addressing the defects that are identified during the inspections, and monitoring the follow-up actions to ensure that they are timely and otherwise appropriate.

A total of 937 highway bridges are owned by a total of 11 public authorities, and 900 of the bridges are owned by the following three public authorities:

- the New York State Thruway Authority (742 bridges),
- the Port Authority of New York and New Jersey (113 bridges), and
- the Metropolitan Transportation Authority (45 bridges).

We interviewed officials at these three public authorities to obtain an understanding of the procedures they use in monitoring the actions taken to address red flag defects identified during bridge inspections. We did not test their practices to determine whether they were effectively following their procedures.

Officials from the Thruway Authority and the Metropolitan Transportation Authority provided documentation showing that they follow the procedures contained in the Department's Bridge Inspection Manual. In addition, both have databases for tracking the follow-up actions until the defects are corrected.

At the Port Authority of New York and New Jersey, officials stated that they use a database to track items needing repair, prioritize these repairs, and track the repairs until they are completed. The officials stated that they do not use a "flag" system like the Department, but they immediately address any safety issue that, under the Department's terminology, would be a red flag. Therefore, they would not have any reportable red flag defects at the time of an inspection.

Since the Department has responsibility for monitoring the condition of bridges throughout New York State, we recommend that it evaluate the bridge inspection and follow up procedures of the Port Authority of New York and New Jersey to determine whether these procedures comply with Department requirements for identifying and addressing structural defects in bridges. In addition, the Department should follow a risk-based approach for periodically verifying that public authorities are adhering to Department requirements for bridge inspections and related follow up.

Recommendations

10. Evaluate whether bridge inspection and follow up procedures of the Port Authority of New York and New Jersey substantially comply with Department requirements for identifying and addressing structural defects in bridges.

    (Department officials replied to our draft audit report that the Bridge Evaluation Services Bureau plans to evaluate bridge inspection and follow up procedures at PANYNJ during the fall of 2009.)

11. Using a risk-based approach, periodically verify that public authorities are adhering to Department requirements for bridge inspections and related follow up.

    (Department officials replied to our draft audit report that the Bridge Evaluation Services Bureau plans to visit at least one authority each year to determine compliance with bridge inspection requirements and advise authority officials of the results. Authorities will be selected based on issues identified, if any during quality assurance reviews and other factors.)

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STANLEY GEE
ACTING COMMISSIONER

DAVID A. PATERSON
GOVERNOR

September 30, 2009

Ms. Carmen Maldonado
Office of the State Comptroller
Division of State Government Accountability
123 William Street - 21st Floor
New York, NY 10038

Re: Draft Report 2008-S-102
Management and Oversight of Structural Defects on Highway Bridges

Dear Ms. Maldonado:

Thank you for the opportunity to respond to the subject report. The New York State Department of Transportation (Department) appreciates the independent assessment of its bridge management practices and the report's identification of some areas for improvement; however, the Department does not agree with the accuracy of several conclusions and believes that the report could mislead readers regarding bridge safety.

SUMMARY OF MAJOR CONCERNS

The Department's major concerns relate to the following two issues.

1. The auditors' reliance on Flag Tracking and Monitoring System (FTMS) data to make conclusions about bridge safety despite knowing that this data was not reliable for the analyses for which they were using it and was not used by the Department for this purpose.
2. The auditors drawing conclusions on bridge safety based on one factor without considering the entire system of controls that is employed by the Department to ensure the safety of the traveling public.

* Comment 1

Reliance on Flag Tracking and Monitoring System Data. Bridge safety has always been among the Department's top priorities. Consistent with National and State laws and regulations, the Department has a systematic procedure to identify serious bridge conditions which can affect public safety and address them in a timely manner. The Department's "Flagging Procedure" sets forth a uniform method of timely notification to responsible parties of serious bridge deficiencies.

* See State Comptroller's Comments on page 35.

Page 9 of the report states that the Department "is slow to notify bridge owners about certain kinds of especially serious red flag defects." The types of flags being referenced are those that the report later identifies as requiring prompt interim action (PIA). I disagree with this conclusion because it is based on analysis of data contained in our FTMS. The Department advised the auditors early in the audit and reiterated throughout that, for reasons detailed below, data in this system was not reliable for the type of analysis for which it was being used.

Prior to 2006, there was no centralized software and database to track bridge flags. The FTMS was implemented on January 1, 2006. It was meant to be a temporary application until replacement software was acquired as part of a larger bridge data system initiative. Thus, the FTMS does not have automatic data validation capabilities. In addition, certain data is overwritten as conditions are acted on but only the date of the most recent action is retained. This provides for a reasonable tool for managing current flag activity but does not allow for accurate historical analysis of flags.

Your auditors confirmed the data was unreliable through their own testing, as detailed in the *Data Completeness and Reliability* section of the report. Nonetheless, the report frequently relies solely on this data for its audit conclusions without consideration of other relevant supporting documentation.

Department staff reviewed the supporting documentation for the seven (7) PIA flags referenced in the report's Executive Summary for which the owners were reportedly not immediately notified of the flagged conditions. This supporting documentation confirmed that the FTMS had an inaccurate flag date or flag notification date for five (5) of the seven (7) transactions. Using accurate dates contained in this supporting documentation, the Department notified the bridge owners as required by its flagging procedure for 4 of these 5 flags, with the remaining notification being made on the day following the flag date. This supporting documentation was forwarded to your office via separate letter. The reason that most of these flags had inaccurate dates was that these flags were issued based on a secondary review (i.e., quality control review or a load rating analysis performed in response to the inspection) but the FTMS indicated the flags were issued on the inspection date rather than the date of the secondary review.

* Comment 2

The FTMS data was accurate for the other two (2) flags and although notification was made beyond the 24 hour requirement, these flags were issued on local bridges in rural areas that the owners had already closed and barricaded. The flags were issued to improve the signage and barricades to help prevent intrusion.

As much of the audit is based on analysis of FTMS data, I have identified throughout this response other conclusions which inappropriately relied upon this data. Nonetheless, the Department is pursuing replacement software (as part of a larger bridge data system initiative) and providing additional guidance to staff to improve the completeness and accuracy of the data recorded in FTMS.

* Comment 3

Relationship Between Timeliness of Owner Response and Bridge Safety. The report's Executive Summary indicates that bridge owners did not respond within the required timeframes for 69 of 204 judgmentally selected flags sampled. The report further states that "As the

* See State Comptroller's Comments on page 35.

Department uses red flags to identify the failure or potentially imminent failure of a critical primary structural component, addressing the defects in a timely manner is an important public safety concern." I agree that addressing defects in a timely manner is important; however, I want to emphasize that the fact that a flag is not addressed within the timeframe established by the Department should not be misinterpreted to conclude that bridge safety is automatically at risk. The Department has redundant controls in place to ensure the safety of the traveling public.

* Comment 4

For example, the Department closely monitors the status of all overdue flags through a monthly report and should Department officials at any time, determine a bridge is not safe to the traveling public, it will close the bridge until the flagged condition is addressed. The Department shared with the auditors copies of these monthly reports covering the period May 2006 through October 2008 (the time of their request).

* Comment 5

Additional specific comments on the report and our response to the audit recommendations are provided below.

COMMENTS ON REPORT TEXT

Report Text: *Page 16 states that "In fact, it had taken an average of more than 17 weeks to address these 69 defects (i.e., more than 17 weeks to either close the bridge, repair the defect, or take alternative action to ensure that the bridge was safe to use)."*

Comment: As discussed in the report, 29 of the non-compliant flags identified were on one bridge, the Gowanus, which the Engineering Division still believes should be exempt from the flagging procedure because there is a contractor on site full-time that schedules red flag-prompted repairs as flagged conditions arise. For the other 40 defects there are reasons why the repairs referenced in the report were delayed beyond the seven-week timeframe. In most instances, the bridges were not owned by the Department and it is the owners' responsibility to correct the red flag condition. Some of the bridges are owned by railroads with maintenance the responsibility of local owners. Ownership issues delayed the repair timeline. In some cases, such as the major flooding in 2006 in several regions of the State, the volume of the work was enormous and repairs needed to be prioritized while continuing to monitor the structures to ensure public safety. As previously noted, should Department officials at any time, deem the bridge not safe to the traveling public, it will close the bridge until the flagged condition is addressed.

Report Text: *Page 16 states that "The time taken to address the remaining 12 defects (5.9 percent) could not be determined because of a lack of documentation."*

Comment: At the time of OSC's analysis, several of these red flag conditions were still being addressed. The Department has documentation of the removal/inactivation date for 9 of the 12 bridges referenced. Conditions for the remaining three (3) flags are being monitored by the owner (and Department as needed) while issues of ownership and repair details are addressed.

* See State Comptroller's Comments on pages 35-36.

Report Text: *Page 17-18 states that "it took the Department an average of 25.3 days, and as long as 248 days, to notify the bridge owners about the defects."*

Comment: This is a conclusion based solely on analysis of FTMS data. For the reasons noted above, it is not accurate. Department staff analyzed the flag dates for the three flags, included in the average calculation, that had the longest reported notification dates. Each of the three had incorrect dates in FTMS.

- For the flag which reportedly took the Department 248 days to notify the bridge owner, supporting Department records showed that the red flag was issued on 2/27/08 and the owner was notified the following day. This red flag was issued for a location which had a previous yellow flag issued on 6/25/07 and the flag date for the red flag in question was errantly recorded in FTMS as 6/25/07 instead of 2/27/08.
- For the flag for which notification reportedly took 209 days, the Department found evidence that the flag was issued on 10/10/06. On 11/15/06, the owner informed the Department that the bridge had been closed for the season and barricaded. Since the owner advised the Department of action taken on the flagged condition within six weeks, it is clear that it did not take the Department 209 days to notify the owner. The owner, without informing the Department, reopened the bridge at a later date. When the Department learned of this situation, a Regional engineer contacted the owner and this subsequent contact date was recorded in the flag tracker program as the notification date. The previous notification date was overwritten. This is evidence of one of the issues with the current system in that it does not store the history of activity.
- The flag that OSC reported that it took 107 days was issued by the bridge inspector on 12/24/07 and the owner was notified on 12/26/07.

* Comment 6

Report Text: *Page 18 states that "For example, according to the data on the Department's Flag Tracking and Monitoring System, for 413 red flag defects, no reminder notices were sent to bridge owners with overdue written responses, and for 12 red flag defects, the reminder notices were not sent until the written responses were months overdue."*

Comment: This is a conclusion based solely on OSC analysis of FTMS data. For the reasons noted in our *Reliance on Flag Tracking and Monitoring System* section, it is not accurate. Department staff evaluated supporting documentation for a random sample of 24 of the 413 red flags referenced and found that reminder notices were not required in eleven (11) of the cases as the defect was addressed in an appropriate manner before the reminder was needed. In seven (7) cases, the owner was contacted verbally or by e-mail but it was not recorded in FTMS. In three (3) cases, the Regional staff was working with the owner on the issues and thus no reminder note was sent as it was believed to be redundant. In the remaining three (3) cases, no documentation was found to show that a reminder notice was sent; however, the defect condition was addressed appropriately.

* Comment 6

Report Text: *Page 20 states that "For one of the defects, the response from the bridge owner did not identify the certifying person as a professional engineer."*

* See State Comptroller's Comments on page 36.

Comment: The auditors are confusing the response to a safety flag with that of a red flag which was issued on the same bridge because the bridge owner's response to the safety flag was entered incorrectly into FTMS as the response for the red flag. Since responses to safety flags do not require a professional engineer (PE) certification, the response which OSC referenced did not require a PE certification.

* Comment 7

The red flag was issued on this already closed (to vehicular traffic) bridge to document its structural condition. The safety flag was issued because a pothole in the bridge deck was a tripping hazard to pedestrian traffic. The bridge owner response noted that they had "cleaned out (pavement) hole and patched with type 7 hot patch". Clearly, this response was provided to the Department in connection with the safety flag and not the red flag.

Report Text: *Page 20 states that "For the remaining 163 defects, the corrective and/or protective actions were certified by 30 different individuals. The individuals were identified as professional engineers, but only 11 of the 30 provided their Professional Engineering License Number or stamped the response with their seal and signed their name over the seal, which is the accepted engineering industry practice. As a result, there was no assurance the other 19 individuals were actually licensed professional engineers."*

* Comment 7

Comment: I do not agree that there was no assurance that these 19 were licensed. Six (6) of the individuals work for the Department. The Department's Personnel Office verifies the status of professional engineering certification for those Department employees requiring one. These verifications are performed upon hiring and periodically thereafter. Four (4) of the 19 were consultant inspectors employed by the Department. The Department's Bridge Evaluation Services Bureau checks the status of the license of all consultant bridge inspectors employed by the Department.

Through the testing performed by your office and additional review performed by the Department, the Department confirmed that all flags which required a PE certification were in fact certified by a licensed PE. This suggests that the verifications did provide assurance that certifications were made by licensed PEs. Nonetheless, I do not dispute that there is a risk that someone could misrepresent themselves as a licensed engineer; and accordingly, as noted in our response to your Recommendation 5, the Department has strengthened its procedures.

RESPONSE TO RECOMMENDATIONS

Recommendation 1: *Develop an action plan to address the causes for delays in addressing red flag defects in the various Regions. As part of this plan, remind the Regional offices of the need to provide timely notifications to bridge owners when red flag defects are identified; specifically, to (a) provide the initial notification within the required seven-day period, (b) send reminder notices when the six-week deadline is approaching, and (c) provide immediate notification when Prompt Interim Action is needed.*

* See State Comptroller's Comments on page 36.

Response: Bridge safety has always been one of the Department's top priorities and accordingly, addressing red flag conditions in a timely manner has and continues to be emphasized to Department staff. Although the audit findings primarily relate to the need for improving documentation in our Regional bridge files, the Office of Structures has reminded our Regional offices of the importance to act in a timely manner in addressing red flags and to properly document these actions so that the files contain complete and accurate information. Several actions that have already been taken include: a reminder regarding the flagging procedure was sent by the Bridge Evaluation Services Bureau to all Regional offices on October 1, 2008; this issue was discussed during a special meeting with all Regional Bridge Management Engineers in September 2008 and at Regional Structures Engineers meetings held during October 2008 and June 2009; and the importance of accurate and complete flagging documentation was also emphasized to Regional Design Engineers during a meeting in April 2009. The Office of Structures plans to finalize a new flagging procedure by March 2010 that will emphasize timeliness in addressing flagged conditions, as well as the need for proper documentation of actions taken in response to red flag defects including the use of e-mail as long as it is filed appropriately.

Recommendation 2: *Monitor the performance of the Regional offices in meeting red flag defect reporting requirements and take corrective actions when the notifications are not timely.*

Response: The Bridge Evaluation Services Bureau does monitor the Regional offices in meeting red flag requirements. Each month a report of all overdue red flags, i.e., those that are not removed or inactivated within the six week time frame, is generated. The overdue red flag report is transmitted to the Deputy Chief Engineer (Structures) and the Chief Engineer. Many of the delays for the flags identified in this report are attributable to development of design procedures, fabrication of components, obtaining required permits, resolving ownership issues, lack of resources with local owners, etc. The Department's Bridge Inspection Unit in the Main Office does discuss these flags with appropriate Regional offices to determine whether interim actions have been taken or adequate monitoring is in place to ensure that the subject bridges remain safe to use until repairs are made. At any time in this process, if the engineer determines a bridge is unsafe to use, the bridge will be closed until the necessary repairs can be made.

As noted above, one of the main issues in this report has been the documentation of corrective actions taken including maintaining a certification on file from a professional engineer stating that the bridge has been evaluated and is safe for loads imposed on it until repairs are completed. Further emphasis will be placed on ensuring that such appropriate interim certifications are appropriately documented.

Recommendation 3: *Monitor the actions taken in addressing red flag defects on the Gowanus Bridge. If the seven-week time frame is not appropriate for bridges in construction status, develop an appropriate time frame for such bridges and monitor against that time frame.*

Response: As noted in the audit, on-going construction projects such as the Gowanus Bridge Project are different than normal bridge operations due to the presence of an on-site contractor managing the construction. This contractor is also responsible for red flag

related repairs; therefore, the red flag repairs become part of the construction contract and are addressed appropriately. Even though these flag repairs were addressed in a timely manner following the flagging procedure, appropriate documentation was not forwarded to bridge identification number (BIN) folders, especially when the flagged condition was being actively monitored until the repairs were addressed and certified by a professional engineer. This issue was discussed with Regional officials responsible for the Gowanus Project and measures have been taken to ensure documentation is filed in the BIN folder in accordance with the flagging procedure. These measures include monthly meetings with all stakeholders to discuss the red flags and associated repair status.

Recommendation 4: *Conduct random audits of the Regional offices' bridge files to determine whether all the required documentation is being kept in the files, and take corrective action when documentation practices do not comply with the requirements.*

Response: The Office of Structures will begin conducting quality assurance reviews in selected Regions each year to assure that all the required documentation is being kept in files and to take any corrective actions, as needed. It should be noted that the current policy stipulates that all flagging related documentation should be in the BIN folders. When a flag is active and work is on-going, this documentation may not be in its BIN folder, but in working folders maintained by assigned Regional staff. The Department will randomly check that the proper documentation is in the correct files after the flag condition is addressed as well as check that documentation is created and available during the active flag time period.

Recommendation 5: *Monitor Regional office compliance with the requirement that the Professional Engineering License Number or stamped seal is provided when actions are certified by engineers.*

Response: The recommendation has been implemented by a memorandum from the Bridge Evaluation Services Bureau to Regional Engineers dated October 10, 2008 directing Regional Engineers to take appropriate actions to ensure that the Professional Engineer License Number and/or Seal is provided when actions require NYS licensed professional engineer certifications. The Department's revised flagging procedure that is expected to be finalized by March 2010 will also reflect this requirement.

Recommendation 6: *Verify the engineering credentials of the 19 individuals in our sample and periodically perform such verifications in the future, especially for bridges owned by localities.*

Response: The recommendation has been implemented. For the 19 individuals referenced above, the Department verified that 16 individuals have a PE license. A PE license was not required for the remaining three individuals. Two of these three individuals were conveying that the bridge had been replaced and the last individual was the bridge owner transmitting correspondence from the professional engineering firm that was hired to analyze the bridge. Department staff did confirm that the individual from the engineering firm was a licensed PE.

Additionally, the Bridge Evaluation Services Bureau issued a memorandum to Regional Engineers dated October 10, 2008 directing them to randomly verify the license status of certifying non-state professional engineers. The Department's revised flagging procedure that is expected to be finalized by March 2010 will also reflect this requirement.

Recommendation 7: *Ensure that the new database system edits include, but are not limited to:*
- *Checks for valid data entry*
- *Reliability of all corrective and/or protective actions.*

Response: A new software system (known as "Bridge Data Interface System" or "BDIS") is in development and is expected to replace the current inspection software in 2012. BDIS will incorporate a flag tracking module. The Department will make every effort to improve the reliability of the data collected using advanced features that can be incorporated into the program such as cross checks for valid data entry. The new system is also expected to monitor the flag data requiring a response within a user specified time (that can be set based on flagging policy in effect at that time) and notify appropriate users if there is no response within that specified time.

Recommendation 8: *Periodically compare the hard copy documentation in the bridge files to the data on the system to verify its accuracy.*

Response: As noted in the Department's response to Recommendation 4, the Office of Structures will be conducting quality assurance reviews in selected Regions each year to assure that required documentation is being kept in the appropriate files and to take any corrective actions needed. Ensuring that documentation in the bridge files matches the data on the system will be one of the items that these reviews will incorporate.

Recommendation 9: *Develop written procedures for entering data on the Flag Tracking and Monitoring System (and the new database system, when it is developed), and provide training to Regional office staff in these procedures.*

Response: This recommendation has already been implemented. A flag tracking software manual was developed and released on January 22, 2009. Training was given to Regional staff who are responsible for entering data into the system on March 24, 2009. These instructions are currently available to users. Help desk support is also available in the proper use of the program.

Recommendation 10: *Evaluate whether bridge inspection and follow up procedures of the Port Authority of New York and New Jersey substantially comply with Department requirements for identifying and addressing structural defects in bridges.*

Response: The Department's Bridge Evaluation Services Bureau plans to evaluate bridge inspection and follow-up procedures at the Port Authority of New York and New Jersey during the fall of 2009.

Recommendation 11: *Using a risk-based approach, periodically verify that public authorities are adhering to Department requirements for bridge inspections and related follow up.*

Response: The Department informs public authorities of changes in Federal and State laws and regulations as soon as they are known and are put into effect. The Bridge Evaluation Services Bureau staff plans on visiting at least one authority each year to determine compliance with bridge inspection requirements and to advise authority officials of any deviations observed. Authorities selected for such visits will be chosen based on issues identified, if any, during quality assurance reviews of submitted inspection reports; number of bridges owned by the authority; bridge network condition; and Regional input.

Sincerely,

Stanley Gee
Acting Commissioner

State Comptroller's Comments

1. The Audit Scope and Methodology section of our report states that the auditors interviewed Department officials and staff, and reviewed the Department's records and documents, Bridge Inspection Manual, bridge inventory database and Flag Tracking and Monitoring System (FTMS). In addition, the auditors reviewed the bridge files maintained in the four regions visited by the auditors in connection with the audit sample of 204 bridges with serious structural defects. Consequently, the scope of work performed to arrive at overarching conclusions was not based solely on FTMS. However, we have revised certain individual findings to address the Department's concerns. The findings now reflect original documentation from Department files as opposed to data shown on FTMS.

2. As Department response points out, the Department provided, via a separate letter, supporting documentation with respect to the number of bridges where owners were not notified timely about bridges with certain kinds of especially serious red flags. We have reviewed this information and adjusted the final audit report, as appropriate, based on this supporting documentation.

3. We are pleased to learn that the Department is pursuing replacement software and is providing guidance to staff to improve the completeness and accuracy of the data recorded in FTMS.

4. The Department defined red flag conditions as those posing a clear and present danger, or if left unattended for an extended period, would likely become a clear and present danger. Furthermore, the Department established timeframes that must be met to correct red flags. Accordingly, the audit report concluded that addressing defects in a timely manner is an important public safety concern. The audit report does not state the bridge safety is automatically at risk when a flag is not addressed on time.

   We would agree that the extent of risk depends on additional factors including the adequacy of redundant controls that are in place while red flag conditions are being addressed. In this regard, while the Department indicates that the May 2006 through October 28 Red Flag Status reports are an example of a redundant control, it should be noted that the reports only identify the last action taken to address a red flag condition and do not show how long flags have been in effect. Consequently, we question whether the reports are an adequate redundant control.

5. We acknowledge that the Department can close a red flag bridge at any time when it is determined that the bridge is unsafe for the traveling public. However, effectiveness of such decisions directly depends on the quality of status information and controls for all aspects of red flag bridges. As the audit report notes and as the Department acknowledges with respect to FTMS, there is opportunity for the Department to improve controls and

information reporting for red flag bridges to enhance assurances that correct decisions are made in a timely manner to protect the safety of the traveling public.

6. We have recast the findings to reflect audit exceptions determined from review of original records pertaining to our sample of transactions.

7. We have revised our report based on information provided in the Department's response.