



New York State Office of the State Comptroller
Thomas P. DiNapoli

Division of State Government Accountability

Inspecting Highway Bridges and Repairing Defects

Metropolitan Transportation Authority



Report 2012-S-32

November 2013

Executive Summary

Purpose

To determine if the Metropolitan Transportation Authority (MTA) Long Island Rail Road (LIRR) and the MTA Bridges and Tunnels (B&T) inspected highway bridges and addressed related deficiencies in a timely manner as required by State and federal laws. Our audit covered inspections performed of LIRR bridges during the period January 1, 2008 to December 31, 2011, and B&T bridges during the period January 1, 2008 to December 18, 2012.

Background

MTA's LIRR and B&T generally must inspect 12 bridges and 1 tunnel that they operate once every 24 months. The deficiencies that are identified during inspections are classified as "Red Flag," "Yellow Flag," and "Safety Flag." A Red Flag designation pertains to the failure or potentially imminent failure of critical primary structural components. Red Flag conditions pose a clear and present or future danger and must be reported to the New York State Department of Transportation (Department) within one week and must be addressed with appropriate action within six weeks. A Yellow Flag designation pertains to a potentially hazardous condition which, if left unattended beyond the next inspection would become a clear and present danger. A Safety Flag designation pertains to a clear and present danger to vehicle or pedestrian traffic, but with no danger of structural failure. Between January 2008 and July 2012, 1,469 flags were issued for the LIRR and B&T highway bridges. As of July 2012, 538 flags remained active, 523 were resolved and 408 superseded flags issued prior to January 2008. We sampled 116 flags including 30 Red, 22 Yellow, and 64 Safety.

Key Findings

- Generally, LIRR and B&T perform bridge inspections and related repairs to correct flag deficiencies in a timely manner as required by State and federal regulations. However, there were a limited number of exceptions suggesting a need for further improvement.
- From our sample of 116 flags, we noted that nine B&T Safety Flags and two Department Safety Flags on LIRR bridges remained unresolved for extended periods of time ranging from 12 to 45 months after being identified.
- For three B&T Red Flags, the required re-inspections were performed from two to eleven days late.
- Five LIRR bridges were being inspected by both the Department and the LIRR.

Key Recommendations

- Ensure that LIRR and B&T have time frames for resolving Safety Flags.
- Ensure that B&T re-inspections are immediately performed for Red Flags that remain open for more than six weeks.
- The LIRR should coordinate with the Department to determine if inspections could be done by one or the other of them that would meet the requirements of both entities.

Other Related Audits/Reports of Interest

[New York State Thruway Authority: Inspecting Highway Bridges and Repairing Defects \(2012-S-33\)](#)

State of New York
Office of the State Comptroller

Division of State Government Accountability

November 8, 2013

Mr. Thomas F. Prendergast
Chairman and Chief Executive Officer
Metropolitan Transportation Authority
347 Madison Avenue
New York, New York 10017

Dear Mr. Prendergast:

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 the Metropolitan Transportation Authority entitled *Inspecting Highway Bridges and Repairing Defects*. This audit was performed pursuant to the State Comptroller's authority under Article X, Section 5 of the State Constitution and Section 2803 of the Public Authorities 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

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This report is also available on our website at: www.osc.state.ny.us

Background

The Metropolitan Transportation Authority (MTA) is a public benefit corporation providing transportation services in and around New York City. MTA has a headquarters and six constituent agencies. Two of the constituent agencies, the Long Island Rail Road (LIRR) and Bridges and Tunnels (B&T) operate and maintain highway bridges. LIRR and B&T are also responsible for inspecting these bridges in accordance with the requirements of federal and State Law.

Under Federal and State Law, LIRR and B&T generally must inspect each bridge at least once every 24 months. Shorter intervals may be required based on bridge age, traffic characteristics and known deficiencies. When inspections identify bridge deficiencies, these are identified as follows:

- “Red Flag” - This means there is a deficiency of a critical structural component that requires prompt evaluation and corrective action. Red Flags present a clear and present or future danger of failure before the next regularly scheduled inspection. When a Red Flag deficiency is found, LIRR and B&T have six weeks to take appropriate action such as closing the bridge, repairing defects or taking an appropriate alternative action to ensure the bridge is safe for use. In addition, LIRR and B&T must notify the New York State Department of Transportation (Department) within one week of the identification of a Red Flag deficiency.
- “Yellow Flag” - This means that the inspection has identified a potentially hazardous condition which, if left unattended beyond the next regularly scheduled inspection, would likely become a clear and present danger.
- “Safety Flag” - This means that the inspection has identified a condition presenting a clear and present danger to vehicle or pedestrian traffic where there is no danger of structural failure or collapse.
- “Prompt Interim Action” (PIA) - This designation is used when a Red Flag or Safety Flag condition is so serious that immediate attention is needed within 24 hours. Unresolved Red Flag conditions must be re-inspected every six weeks to ensure there has been no further deterioration to PIA status.

B&T has seven highway bridges and one traffic tunnel, and LIRR has five highway bridges subject to State highway bridge inspection requirements. These structures are further defined according to their individual components for specific inspection purposes. For example, components include bridge levels, ramps and pedestrian walkways. Between January 2008 and July 2012, there were 60 Red, 1,016 Yellow and 377 Safety flags issued on the B&T tunnel and bridges and there were 1 Red, 6 Yellow and 9 Safety flags issued on LIRR bridges from Department inspections. As of July 12, 2012, 538 of the flags remained active, 523 had been removed and 408 superseded flags that had been issued prior to January 2008.

Audit Findings and Recommendations

Timeliness of Inspections

We examined a sample of 116 flags which were issued during our audit period and pertained to one B&T tunnel and seven bridges and five LIRR bridges. The sample included including 29 Red, 16 Yellow and 55 Safety flags at B&T, and 1 Red, 6 Yellow and 9 Safety flags at LIRR as shown in the following table:

| | Facility | Flags Sampled |
|--------------|-----------------------|---------------|
| B&T | Henry Hudson | 9 |
| | Queens Midtown Tunnel | 4 |
| | Marine Parkway | 11 |
| | Cross Bay | 6 |
| | Throgs Neck | 25 |
| | Bronx Whitestone | 9 |
| | Robert F. Kennedy | 32 |
| | Verrazano | 4 |
| LIRR | Bridge Lane | 0 |
| | Bridge Rd/Webster Ave | 6 |
| | Colonial Road | 3 |
| | Cranberry Hole Road | 4 |
| | River Ave | 3 |
| Total | | 116 |

Generally, the inspections of both B&T and LIRR facilities and the related corrective action were performed in a timely manner as required. We did, however, note some exceptions as follows:

- Of 55 B&T Safety Flags, nine remained active, from 12 to 41 months, although the deficiencies pertained to conditions that would appear to warrant more timely corrective action. For example, according to B&T records, one flag pertained to a “loose clamp bolt” that could fall onto a college parking lot. Another flag involved a catwalk that could fall onto a construction barge unless it was repaired. B&T officials subsequently reported that seven of the nine flags were resolved but provided no documentation showing the repairs or interim mitigating safety actions that had been taken.
- Of nine LIRR Safety Flags resulting from Department inspections, one was left open 14 months and another was left open for 45 months.
- Of 29 B&T Red Flags, three remained open for more than six weeks, yet three of the required re-inspections were performed two to eleven days late.

In response to our findings, B&T officials commented that non-PIA Safety Flags are given a lesser priority as long as these can be mitigated by appropriate interim actions. Both B&T and LIRR officials also pointed out that State requirements do not address timeframes for resolving Safety

Flags. As a result, neither B&T nor LIRR procedures establish timeframes for resolving these flags. In addition, B&T officials informed us that waiting to handle numerous Safety Flags during large scale construction projects may be a more efficient plan than resolving each flag on an individual basis according to a timeframe requirement. MTA officials said that establishing such time standards is up to the Department. While we acknowledge the efficiency of planning to address Safety Flags during construction projects, we also point out that Safety Flags that are not resolved in a timely manner could worsen to PIA status and thus, would pose an increased public safety risk. Therefore, we believe timeframes for Safety Flag repairs still need to be in place and adhered to regardless of whether there is a plan to incorporate them into a construction project.

Recommendations

1. Ensure that B&T and LIRR have time frames for resolving Safety Flags.
2. Ensure that B&T re-inspections are immediately performed for Red Flags that remain open for more than six weeks.

Monitoring Flag Conditions

Once flag conditions are identified, these must be reported in a timely manner and corrective actions must be accurately tracked. During our examination, we noted LIRR satisfactorily addressed the structural flags from the Department's inspections. However, we noted some flag monitoring exceptions at B&T as follows:

- B&T flag reports were prepared up to 34 days late for 7 of the 100 flags we sampled including 1 Red, 4 Yellow, and 2 Safety.
- B&T reported 4 of its Red Flags in our sample to the Department up to six days past the one week requirement.
- B&T maintains a "Flag Log" to show the issue date and corrective action status of each flag. The Log is intended to help the B&T Structural Engineering Manager to monitor each flag and to schedule the necessary work to resolve each flag. When we reviewed the Log, we noted that it had inaccuracies pertaining to the corrective actions and repair dates for 10 of the 100 flags in our sample.

Correcting these exceptions should further strengthen flag monitoring.

Recommendations

3. Ensure that B&T prepares its flag reports and in a timely manner.
4. Ensure that B&T notifies the Department of Red Flags in a timely manner.
5. Ensure that the Flag Log is accurately maintained by B&T.

LIRR Highway Bridge Inspections

Both the LIRR and the Department inspect the same five highway bridges. The Department's inspections follow State highway bridge inspection requirements. However, the LIRR inspections are done according to Federal Railroad Administration (FRA) requirements that apply to bridges carrying trains, not highway bridges. Therefore, the inspections according to FRA requirements do not meet the Department's requirements. Efficiencies could potentially be achieved if inspections that meet the needs of both entities were done by one or the other.

Recommendation

6. The LIRR should coordinate with the Department to determine if inspections that meet both of their needs could be done by one or the other of them.

Audit Scope and Methodology

Our audit objective was to determine whether the MTA inspects its highway bridges and repairs defects. The audit covered B&T inspections performed during the period from January 1, 2008 through December 18, 2012, and Department inspections of LIRR bridges performed from January 1, 2008 through December 31, 2011.

To accomplish our objective, we interviewed MTA officials to confirm and enhance our understanding of its practices for inspecting and repairing highway bridges. We reviewed applicable laws, regulations, Department highway bridge inspection and repair requirements, MTA flagging procedures, MTA's bridge inspection and repair databases and flag tracking records. We compared MTA bridge inspection data to information maintained by the Department.

We selected a judgmental sample of 100 flag conditions on the B&T tunnel and bridges identified between January 1, 2008 and July 12, 2012. Our selection included all facilities, all flag types, and flag status. At B&T our flag sample included 29 Red, 16 Yellow and 55 Safety. At the LIRR we tested all 16 flags issued per Department inspections between January 1, 2008 and December 31, 2011. The flags included 1 Red, 6 Yellow and 9 Safety.

At both B&T and the LIRR we reviewed inspection and flag records including BIN folders containing inspection and flag reports, flag removal/inactivation reports, and other related repair documents for our sample. For 65 of the 100 sampled B&T flags (49 closed and 16 active flags), we reviewed additional documents such as BIN file correspondence showing flag urgency and repair decisions; Flag Log entries describing corrective and/or projected action dates; corroborating independent evidence of repair work (i.e. re-inspection reports, maintenance work orders, employee timesheets, vendor invoices); and before and after photos of the flagged location. In addition, we physically observed select bridge repairs. We also examined records to determine whether inspections were completed and submitted to the Department where applicable.

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

This audit was performed pursuant to the State Comptroller's authority under Article X, Section 5 of the State Constitution and Section 2803 of the Public Authorities Law.

Reporting Requirements

A draft copy of this report was provided to MTA officials for their review and comment. Their comments were considered in preparing this final report, and are included in their entirety 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 Chairman and Chief Executive Officer of the Metropolitan Transportation Authority 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 This Report

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Vision

A team of accountability experts respected for providing information that decision makers value.

Mission

To improve government operations by conducting independent audits, reviews and evaluations of New York State and New York City taxpayer financed programs.

Agency Comments

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Thomas F. Prendergast
Chairman and Chief Executive Officer



Metropolitan Transportation Authority

State of New York

August 14, 2013
Ms. Carmen Maldonado
Audit Director
The Office of the State Comptroller
Division of State Government Accountability
123 William Street – 21st Floor
New York, NY 10038

Re: Draft Report #2012-S-32 (Inspecting Highway Bridges and Repairing Defects)

Dear Ms. Maldonado:

This is in reply to your letter requesting a response to the above-referenced draft report.

I have attached for your information the comments of Jim Ferrara, President, Bridges and Tunnels, and Helena E. Williams, President, LIRR, which address this report.

Sincerely,

A handwritten signature in black ink, appearing to read "T. F. Prendergast".

Thomas F. Prendergast
Chairman and Chief Executive Officer

Attachment

The agencies of the MTA

MTA New York City Transit
MTA Long Island Rail Road

MTA Metro-North Railroad
MTA Bridges and Tunnels

MTA Capital Construction
MTA Bus Company

Jamaica Station
 Jamaica, NY 11435-4380
 718 558-8252 Tel
 718 657-9047 Fax

Helena E. Williams
 President



August 9, 2013

Mr. Tom Prendergast
 Chairman and Chief Executive Officer
 Metropolitan Transportation Authority
 347 Madison Avenue
 New York, NY 10018

**RE: New York State Comptroller's Request for Response
 Inspecting Highway Bridges and Repairing Defects - 2011-S-32**

Dear Chairman Prendergast:

As required by Section 170 of the Executive Law, detailed below are the updated actions that have been taken to address the recommendations contained in the State Comptroller's Audit of the LIRR's Inspecting Highway Bridges and Repairing Defects. The audit contained recommendations designed to aid the Long Island Rail Road in ensuring the continued safety of its passengers.

Recommendation No. 1

- Ensure that LIRR has time frames for resolving Safety Flags.

LIRR Implementation Status:

Although currently NYSDOT has not established formal time frames for resolving Safety Flags, the LIRR does monitor their status on a regular basis to ensure that conditions have not worsened. If immediate repairs are required, the LIRR will issue a Prompt Interim Action (PIA) condition, and LIRR forces will be dispatched to address immediately.

LIRR will work with NYSDOT to review the above recommendation to establish consistent time frames for addressing Safety Flags. If an agreement is reached, the LIRR will adopt these time limits.

The audit notes that there were two Safety Flags resulting from NYSDOT inspections that were open for extended periods of time (a damaged guardrail – 14 months and an uneven sidewalk – 45 months). The LIRR has no record of receiving notification of these two flags from NYSDOT, but it is aware that they were for conditions on the approach of the bridge, which according to New York Railroad Law 93 are highway items that are not the responsibility of the LIRR and instead are to be maintained by the municipality using the structure. Nevertheless, in order to ensure safe conditions, the LIRR repaired the uneven

MTA Long Island Rail Road is an agency of the Metropolitan Transportation Authority, State of New York
 Thomas F. Prendergast, Chairman and Chief Executive Officer

Mr. Prendergast
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sidewalk in April 2013, because it is adjacent to an area that the LIRR uses as an access point to repair impact damage to the structure. LIRR notified NYSDOT of such repair.

Status: *Implemented and On-Going.*

Recommendation No. 2

- The LIRR should coordinate with the Department to determine if inspections that meet both of their needs could be done by one or the other of them.

LIRR Implementation Status:

LIRR and NYSDOT have agreed that the biennial structural evaluation of the structures in question will be performed by NYSDOT forces, as required by federal and state highway laws and regulations. LIRR will continue to monitor and inspect the subject structures for the sole purpose of safety and maintenance issues. NYSDOT will forward a copy of the biennial inspection report of the subject bridges to LIRR for their records and will continue to forward structural related flags to LIRR, which will be addressed by LIRR maintenance forces. LIRR will notify NYSDOT upon completion of said repairs. In addition, NYDOT will forward Safety Flags related to highway items to the local municipality for their attention.

Status: *Implemented.*

We believe the LIRR's action plan addresses the recommendations of the State Comptrollers Office. Please contact me should you require additional information.

Sincerely,
 FOR

Helena E. Williams
President

c: M. Young
M. Gelormino
J. Calderone
K. Tomlinson
J. Rosado
M. Fucilli
D. Jurgens

Memorandum



Date: August 5, 2013

To: Thomas Prendergast, Chairman and CEO, MTA

From: Jim Ferrara, President, MTA Bridges and Tunnels 

Re: NYS Comptroller Audit No. 2012-S-32

Attached please find our proposed response for your consideration to the Draft Report 2012-S-32 entitled "Inspecting Highway Bridges and Repairing Defects". This report was submitted to your office by the New York State Comptroller, whose office performed an Audit of both B&T and LIRR's highway bridge inspection programs.

In summary, we are pleased with the result of the Audit which validates our conformance to Bridge Inspection requirements of the FHWA and NYSDOT.

In 2006, MTA Headquarters initiated an independent thorough review of MTA Bridges and Tunnels Bridge Inspection program. The final report dated May 14, 2007 entitled "Review of the MTA Bridges and Tunnels Bridge Inspection Program" [Programmatic Review] assessed our bridge inspection program as "very positive". The report states that the program meets the minimum state and federal standards and in several areas exceeds these minimum standards.

The draft report resulting from the recent NYS Comptroller Audit states: "Generally, LIRR and B&T perform bridge inspections and related repairs to correct flag deficiencies in a timely manner as required by State and Federal regulations." The NYS Comptroller Audit Team did however note a limited number of exceptions, which, in their opinion require further review.

Enclosed are the NY State Comptroller's key findings, exceptions and our responses

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Response to NYS Comptroller Audit No. 2012-S-32
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RESPONSES TO NY STATE COMPTROLLER'S AUDIT DRAFT REPORT No. 2012-S-32

TIMELINESS OF INSPECTIONS

NYS Comptroller Key Findings for MTA Bridges and Tunnels and MTA Long Island Rail Road

Page 1 of the Report states:

1. "From our sample of 116 flags, we noted that nine B&T Safety Flags and two Department Safety Flags on LIRR bridges remained unresolved for extended periods of time ranging from 12 to 45 months after being identified."

Recommendation (on Page 7 of the Report)

1. "Ensure that LIRR and B&T have time frames for resolving Safety Flags."

MTA Bridges and Tunnels Response

1. **Planned action.** The New York State Department of Transportation (NYSDOT) governs the bridge inspection program within New York State, and does not impose time requirements with regards to repair or removal of Safety Flags. Certain Safety Flags that are classified as "PIA" (Prompt Interim Action) are mandated to be corrected within 24 hours. In all cases PIA Safety Flags were addressed within the required time. We will address the recommendation by working cooperatively with the NYSDOT to review and implement any appropriate changes to time requirements for safety flag resolution.

Page 1 of the Report states:

2. "For three B&T Red Flags the required reinspections were performed from two to eleven days late."

Recommendation (on Page 7 of the Report)

2. "Ensure that B&T reinspections are immediately performed for Red Flags that remain open for more than six weeks."

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 Response to NYS Comptroller Audit No. 2012-S-32
 Page 2

MTA B&T Response

2. **We will implement this recommendation.** NYSDOT Flagging Procedure on Red Flags: "Generally, all actions taken shall be completed within six weeks from the date of Written Notification to the Responsible Party". To clarify, we will revise our Internal Procedures to require that the six-week criteria is applied to Red Flags per NYSDOT Flagging Procedure.

MONITORING FLAG CONDITIONS

NYS Comptroller Exceptions for MTA Bridges and Tunnels

Page 7 of the Report states:

"B&T flag reports were prepared up to 34 days late for 7 of the 100 flags we sampled including 1 Red, 4 Yellow, and 2 Safety."

Recommendation (on Page 7 of the Report)

3. "Ensure that B & T prepares its flag reports in a timely manner."

MTA B&T Response

3. **We will implement this recommendation.** Review of our records indicates that six Flag Reports were prepared from 1 to 6 days beyond the required reporting period. This occurred due to a necessity of a more detailed engineering quality control review of the Flag reports, analyses and follow-up discussions to ensure the accuracy of reported conditions. In no case did Flag reporting impact the safety of the public or employees. MTA Bridges and Tunnels will review its current processes and procedures and improve the program to assure that reports are completed within the required time frame.

Page 7 of the Report states:

"B&T reported 4 of its Red Flags in our sample to the Department up to six days past the one week requirement."

Recommendation (on Page 7 of the Report)

4. "Ensure that B & T notifies the Department of Red Flags in a timely manner."

MTA B&T Response

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Response to NYS Comptroller Audit No. 2012-S-32
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4. **We will implement this recommendation.** We will review our procedures and streamline the process to ensure that such notifications are made within the appropriate time.

Page 7 of the Report states:

"B&T maintains a "Flag Log" to show the issue date and corrective action status of each flag. The log is intended to help the B&T Structural Engineering manager monitor each flag and to schedule the necessary work to resolve each flag. When we reviewed the Log, we noted that it had inaccuracies pertaining to the corrective actions and repair dates for 10 of the 100 flags in our sample."

Recommendation (on Page 7 of the Report)

5. "Ensure that the Flag Log is accurately maintained by B&T."

MTA B&T Response

5. **We will implement this recommendation.** We will review our Flag Log procedure, to make sure requirements are applied consistently throughout the process.

We would like to thank the Comptroller's Office for their recommendations to strengthen the Authority's Bridge Inspection Program.

c J. Keane
M. Fucilli
A. Stathopoulos
M. Bronfman
V. Fraschilla