CITY OF PHILADELPHIA
PENNSYLVANIA

OFFICE OF THE CONTROLLER

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DEPARTMENT OF STREETS

BRIDGE MAINTENANCE REVIEW

September 2013

City Controller
ALAN BUTKOVITZ

CITY OF PHILADELPHIA

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September 17, 2013

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Pursuant to Section 6-400(d) of the Home Rule Charter, the Controller's Office conducted a review of the city's bridges to assess safety and maintenance conditions. The results of this assessment are contained in the attached report, a synopsis of which is provided in the executive summary.

We discussed our findings and recommendations with your staff at an exit conference and included your department's written response to our comments as part of the report. We believe that our recommendations, if implemented by management, will improve the efficiency and effectiveness of maintenance and operations for the Bridge Maintenance Unit. Our recommendations have been numbered to facilitate tracking and follow-up in subsequent years.

We would like to express our thanks to you and your staff for the courtesy and cooperation displayed toward us during the conduct of our work.

Very truly yours,

ALAN BUTKOVITZ
City Controller

cc: Honorable Michael A. Nutter, Mayor
Honorable Darrell L. Clarke, President
and Honorable Members of City Council
Members of the Mayor's Cabinet

Department of Streets
Bridge Maintenance Review 2013

Executive Summary

Why The Controller's Office Conducted The Examination

There are approximately 343 City-owned bridges in Philadelphia, which carry hundreds of thousands of motorists each day. Ensuring the safety of these bridges and the citizens who use them each day is of great importance. In 2009, the Controller's Office issued a report on the condition of the City's bridges. This report set forth a list of serious problems related to how well these bridges are being inspected and maintained. The objective of the 2013 review was to determine if the same kinds of problems still persisted throughout the City's bridge system.

What The Controller's Office Found

During on-site bridge inspections and associated reviews of bridge data in the spring of 2013, the Controller's Office found several of the same maintenance issues that were cited in its 2009 report. Among these conditions were the following general findings:

General Findings

- The Streets Department's Bridge Maintenance Unit (BMU) does not use a database for prioritizing, tracking and managing resource allocations and work orders.
- The BMU files provided to us often lacked sufficient details to determine whether the conditions had worsened over time.
- Two of the four bridges that were revisited from the 2009 report had not been repaired as required.
- Some of the conditions that were observed included severe alligator cracking of the surface, large areas of concrete that had fallen from the bridge, exposed rebar, and heavily corroded and deteriorating supporting steel.
- Through discussions with the Streets Department's staff it was determined that:
  - Due to the fact that the federal and state governments provide the majority of capital dollars for bridge replacement costs, but do not pay for bridge maintenance costs, there appears to be an incentive for the city to avoid spending operating money to maintain the bridges.
  - Bridges that cross over railroads can be difficult to maintain and replace due to a lack of cooperation from the railroad companies.

What The Controller's Office Recommends

The Controller's Office has developed a number of recommendations aimed at improving the Bridge Maintenance Unit's procedures, tracking, and workflow. These recommendations can be found in the body of the report.

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BACKGROUND

According to the Pennsylvania Department of Transportation (PennDOT) one in every four city owned bridges is structurally deficient.[1] Based on information provided by the Philadelphia Streets Department, there are approximately 343 City-owned bridges in the City of Philadelphia. Of the 343 bridges in Philadelphia, 251 are inspected and maintained by the Philadelphia Streets Department's Bridge Maintenance Unit (BMU), 22 are partially maintained by BMU, and the other 70 are not their maintenance responsibility.

Approximately 150 of the bridges in Philadelphia fall under PennDOT's Bridge Management System (BMS), and approximately 193 are classified as non-BMS. PennDOT's Bridge Safety Inspection Manual describes BMS as a system designed to optimize the use of available resources for the inspection, maintenance, rehabilitation, and replacement of bridges[2]. State bridge inspection guidelines use priority codes to classify the severity of the bridge conditions.

The Streets Department's Bridge Maintenance Unit follows PennDOT's established guidelines which call for each bridge to be inspected every two years in the same scheduled month under normal conditions. However, more frequent inspections are mandated if serious problems are identified during routine inspections. If the bridge inspection does not occur in the designated month, PennDOT will perform the inspection and the City of Philadelphia is billed for the cost.

For bridges that cross waterways, the underwater structures must be inspected to the extent necessary to determine their structural condition with certainty, according to the Federal Highway Administration, Office of Bridge Technology. Underwater inspections must also include the streambed. In shallow water, underwater inspections may be accomplished visually or tactilely from above the water surface; in deep water, however, inspections will generally require diving or other appropriate techniques to determine conditions. The underwater inspector has a wide range of diving, inspection, and documentation equipment and techniques available.[3] In Philadelphia, underwater inspections are performed every four years by a PennDOT contractor, and the inspection reports are forwarded to the BMU. Problems resulting from inspections are referred to the Streets Department's Bridge Design Branch for further action.

According to PennDOT's report[4] 24 city-owned bridges have weight limit postings indicating that any vehicle over that weight limit is forbidden to travel across the bridge. Six of the bridges have a posting of five-tons or less. Ninety city-owned bridges are at least 60 years old, and 22 of the city owned bridges were built before 1900. The oldest city-owned bridge is Fisher's Lane over Tacony Creek which was built in 1796 and rehabilitated in 1801. Fisher's Lane has a 15 ton weight limit. The average daily traffic for all city owned bridges is 1,200,000 vehicles per day. The Zoological Avenue Bridge, built in 1930, is the most traveled with 75,000 vehicles a day.

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[1] Statistic is based on public data compiled from PennDOT's July 1, 2013, report, "Bridges on Local Route System, Length 20' or Greater".

[2] Bridge Safety Inspection Manual, Publication 238m, 2nd Edition, October 2002, Commonwealth of Pennsylvania Department of Transportation.

[3] Underwater Bridge Inspection, Publication FHWA-NHI-10-027, Pre-Publication Edition, June 2010, Federal Highway Administration, U.S. Department of Transportation.

[4] Statistic is based on public data compiled from PennDOT's July 1, 2013, report, "Bridges on Local Route System, Length 20' or Greater".

In 2009, the Controller's Office issued a report on the condition of the City's bridges. This report set forth a list of serious problems related to the inspection and maintenance of these bridges.

OBJECTIVE AND SCOPE

During the spring of 2013, the Controller's Office initiated a follow-up to our 2009 Bridge Inspections Review. Our objective was to determine if the same type of conditions were still present in the City's bridge system. Specifically, we wanted to determine whether these bridges are being inspected and maintained in a satisfactory manner and to assess the conditions of the bridges.

As with the 2009 review, our specific objectives were to address the following questions:

- Is the city complying with two-year bridge inspection requirements?
- Are maintenance repairs being performed in a timely fashion?
- What are the conditions of city-owned bridges and how did they compare to the bridges examined in the 2009 report?

The scope of our review primarily focused on bridges that BMU is charged with inspecting and maintaining.

METHODOLOGY

We judgmentally selected a representative sample of eight bridges from around the city for inspection. Our sample consisted of seven BMS bridges and one non-BMS bridge. The Controller's Office's bridge inspections team was led by a licensed Civil Engineer.

Our inspections, performed in March 2013, were solely visual and without the use of any specialized underbridge or aerial equipment. Therefore, our inspections were limited to areas easily accessible. In addition to the visual inspections, our fieldwork included photographing conditions observed, conducting interviews with BMU personnel, and analyzing BMU files, reports, and other pertinent data. For each bridge file we reviewed, there were three inspection reports in the file, representing the last three inspections for each bridge.

FINDINGS

Our review revealed that the bridges are being inspected in substantial compliance with applicable state bridge inspection guidelines; and all of the files we reviewed included the required bridge load calculations (rating). However, we found several conditions that require corrective action. The findings are outlined below under "General Conditions" and were also included in the BMU inspection reports. In addition, we found most of the recommendations made in previous BMU inspection reports were still largely unaddressed.

General Conditions

1. The Bridge Maintenance Unit does not utilize a database or automated system to prioritize and manage resource allocations and work orders. However, during an interview with Streets Department personnel we were informed that BMU is in the testing phase of a program called "Cityworks" that will compile relevant data, link the reports to maintenance, and have the capability to sort tasks based on completion time, and weather conditions. This program is designed to improve tracking and assist in the assignment and distribution of work to the appropriate BMU crews at the appropriate time.

2. Some of the bridge files we reviewed contain inspection reports that lacked sufficient details to determine whether problem conditions had worsened over time.

3. Problem conditions identified for maintenance and/or repair were often not addressed for years. The current federal/state system for funding bridge maintenance and bridge replacement work provides a disincentive for the City to perform maintenance and repair work, according to the following formula: bridges that are replaced are generally paid for by the City (5%), the state (15%) and the Federal Government (80%). This arrangement creates an incentive to replace bridges rather than to maintain them. Bridge maintenance and repair work is 100% funded from the City's general fund.

4. Currently, the Streets Department Highway Division does not have an accounting system in place that accurately depicts the amount of money being spent by each of the smaller operating units, such as the BMU. The Highway Division has a general fund from which money is taken to cover tasks under the Highway Division, such as paving, line striping, potholes, snow removal, and bridge maintenance. Without an appropriate accounting system, there is no easy way to determine the amount of money being spent each year on BMU, and whether this amount needs to be adjusted.

5. Bridges over railroads such as SEPTA, Amtrak and CSX, present a major problem. According to the Streets Department representatives, this type of bridge work adds millions of dollars and many years to projects. For example, we were informed that the City paid almost as much to Amtrak ($2,877,719) as to the contractor ($2,942,860) for the Linden Avenue Bridge project. These representatives claim the City has sought help from the federal government regarding this matter but to no avail.

   In addition, for bridges over Amtrak railways, the City currently must negotiate an agreement with Amtrak for each bridge and the City must reimburse Amtrak for the cost of their legal services. We were informed that the City and Amtrak are negotiating a

master agreement for all bridges over Amtrak's right of ways. This would speed up the completion process and reduce the cost of associated bridge work.

Site Specific Conditions

6. **Bridge No. 624 Carrying Willow Grove Avenue over SEPTA, N. of St. Martins Lane**: This bridge is a 67-foot, 3-span, steel I beam structure built in 1883 and rehabilitated with a steel structure in 1963. It is on a 12-month inspection cycle due to its three ton load posting. The bridge is in the planning process for being replaced with construction tentatively scheduled to begin in January 2015, according to the Streets Department. In 2009 we observed that the structural steel underneath is in very poor condition. The steel beams are heavily corroded. The bottom halves (bottom flange and part of the web) of four beams are completely gone. At the south side two support beams have been installed, however nothing has been done on the north side.

   During our recent inspection, we noticed that the 2009 defects had not been corrected and that the asphalt surface is cracking with minor depressions. After our field work was complete, the Streets Department announced that it would temporarily close the bridge over two weekends to perform maintenance repairs to the beams on the underside of the structure.

7. **Bridge No. 187 Carrying Mascher Street over CONRAIL, North of Indiana Avenue**: This bridge is a 125-foot, 1-span, concrete structure built in 1931. It is on a 12-month inspection cycle due to its three ton posting. We observed that the asphalt is in poor condition and has heavy alligator cracking parallel to the curbs a few feet away. There is minor cracking on the concrete abutments and in the floor beams. There is some concrete separating off the wings of the bridge.

8. **Bridge No. 340 Carrying Bells Mill Road over Wissahickon Creek:** This bridge is a 67-foot, 2-span, masonry structure built in 1820. It is on a 12-month inspection cycle due to its posting as well as its low substructure rating from a previous report. Funding is not available yet but it is anticipated that construction of major improvements to the bridge will begin in 2017, according to the Streets Department. We observed that the superstructure has some mortar loss and minor cracking. The abutments also have some mortar loss and minor cracking. Some concrete has fallen off the underside of the archway.

9. **Bridge No. 11.5 Carrying Strawberry Mansion Drive over Schuylkill River:** This bridge is a 1,242-foot, 10-span, steel structure built in 1897 and rehabilitated in 2003. Since Strawberry Mansion Bridge was recently rehabilitated it is in good condition. We observed that there is minor stone and concrete cracking at the abutments. There is also minor cracking in the concrete.

10. **Byberry Rd. Bridge over CSX Transportation:** This bridge is a 140-foot, 2-span, steel truss structure built in 1996. It is posted at three-ton and is not maintained by BMU. The concrete supports are damaged in many places. The surface has minor to medium cracking.

11. **Bridge No. 179 Carrying Henry Avenue over Gorgas Lane:** This is a 7-span prestressed concrete I- beam bridge over Gorgas Lane and a tributary of the Wissahickon Creek. In 2009 we observed that the concrete is spalling at a number of piers exposing reinforcing steel bars, and the steel plates at bearings are rusted and corroded. This bridge had been repaired and evidence of repairing the concrete in several places could be seen since the 2009 report.

12. **Bridge No. 79 Carrying Calumet Street over SEPTA:** This is a single span concrete encased steel bridge over SEPTA tracks built in 1925. In 2009 we observed that the steel beams are exposed, heavily rusted, and corroded in a few places. The abutments are losing mortar and concrete is cracking badly. These conditions have not been addressed since our 2009 report.

13. **Bridge No. 102 Carrying Edison Avenue over Poquessing Creek (Near Trevose Road)**: This is a single span concrete arch bridge over a branch of the Poquessing Creek built in 1905. In 2009 we observed heavy concrete spalls at several locations weakening the bridge structure. Several pedestals at the parapet wall are crushed and/or broken causing a safety hazard. These conditions were largely addressed since the 2009 report although there is concrete falling from the bridge in new places.

Additional Finding:

14. The Streets Department does not routinely coordinate its bridge maintenance and repairs with railroad entities as a means to reduce project costs. Through interviews held with the Streets Department, the Controller's Office discovered there had been substantial savings on the Cresson Street retaining wall project. This savings was a result of cooperative and coordinated efforts between the Streets Department and the railroad.

15. PennDOT's BMS has either the sole (70) or partial (22) responsibility for the inspection and maintenance of 92 of the 343 bridges in the City of Philadelphia; however, the Streets Department does not have access to PennDOT's records on the condition of these bridges.

RECOMMENDATIONS

The following recommendations are based on the Controller's Office's 2013 review and the findings outlined in this report. We have summarized our recommendations into two categories: general recommendations and site specific recommendations.

General Recommendations:

1. In our 2009 report we recommended that the Bridge Maintenance Unit should implement and utilize a comprehensive work order system to keep track of all necessary repair work, and prioritize the most critical repair work to be done. With limited resources available, it is important for the Streets Department to implement internal controls to make the most efficient use of its resources.

   In 2013, "Cityworks" is in the testing phase and it should be made a priority to have it implemented as soon as possible. [441213.01]

2. In our 2009 report we recommended that BMU should be more proactive with maintenance work, including but not limited to cleaning of expansion dams and scuppers, and reparging of exposed rebar.

   This comment from 2009 seems largely unaddressed. BMU should develop an action plan to address this issue as stated in the prior recommendation. [441213.02]

3. In our 2009 report we recommended that inspection reports should include more detail in regards to problems encountered, including ample photographs. Without detailed descriptions and photographs of problems, it is difficult to determine whether conditions have worsened over the last two years or between inspections.

   This comment from 2009 seems largely unaddressed. A section showing deficiency photographs should be added to the reports. [441213.03]

4. In our 2009 report we recommended that state guidelines should be followed in regards to when interim/additional inspections are required. For example, bridges that have weight restrictions should be inspected every 12 months.

   Based on our sample this issue appears to have been addressed.

5. In our 2009 report we recommended that the Streets Department Highway Division should develop an accounting system that accurately depicts the amount of money allocated and/or spent by each of the operating units such as BMU. This will allow them to determine the amount of money spent each year by these units, as well as how much money is needed each year by these units.

   Other than "Cityworks" this comment from 2009 has not been addressed. The Streets Department Highway Division should develop an action plan to address this issue as stated in the prior recommendation. [441213.04]

6. In our 2009 report we recommended that the Streets Department should investigate whether bridge repair costs can be aggregated in Requirements Contracts that would satisfy the Capital Eligibility Guidelines for allowing such expenditures to be funded through the capital budget.

   There has been no evidence provided to the Controller's Office to indicate that the comment from 2009 has been addressed. The Streets Department should develop an action plan to address this issue as stated in the prior recommendation. [441213.05]

7. In our 2009 report we recommended that the memorandum of agreement between the city and the state should be updated to clearly document ownership, and the maintenance and major repair responsibilities of all bridges that fall under the city/state agreement.

   There has been no evidence provided to the Controller's Office to indicate that the comment from 2009 has been addressed. The Streets Department should develop an action plan to address this issue as stated in the prior recommendation. [441213.06]

8. Bridges that are replaced are generally paid for by the City (5%), the state (15%) and the Federal Government (80%). This arrangement creates an incentive to replace bridges rather than to maintain them. The city should determine whether it is possible to get the federal and state governments to provide funding for bridge maintenance which would reduce long term costs for all agencies involved. [441213.07]

9. The City and railroad entities need to coordinate projects and shutdowns for the City to realize cost savings opportunities. The City should develop a Memorandum of Understanding with SEPTA, Amtrak and CSX to establish an annual or monthly schedule of when rail lines will be shut down. This would allow the City to gain more time to complete projects and it would avoid having to pay the railroad for lost fares due to a requested service shutdown.

10. The City of Philadelphia should establish a Memorandum of Understanding or some other form of agreement with the State of Pennsylvania which would provide the Streets Department with the appropriate level of access to PennDOT's records related to the condition of all state maintained bridges in Philadelphia.

Site Specific Recommendations

11. **Bridge No. 624 Carrying Willow Grove Avenue over SEPTA, N. of St. Martins Lane**: After the recent stage of repairs, inspection reports for this bridge should be reviewed and future repairs should be made as needed until the bridge is replaced. Load calculations should be revisited to see if the three tons load limit is still adequate. [441213.08]

12. **Bridge No. 187 Carrying Mascher Street over CONRAIL, North of Indiana Avenue:** Inspection reports for this bridge should be reviewed and repairs should be performed accordingly. [441213.09]

13. **Bridge No. 340 Carrying Bells Mill Road over Wissahickon Creek:** Inspection reports for this bridge should be reviewed and appropriate repairs should be made until the bridge is replaced. Load calculations should be revisited to see if the three ton load limit is still adequate. [441213.10]

14. **Bridge No. 11.5 Carrying Strawberry Mansion Bridge over Schuylkill River**: Inspection reports for this bridge should be reviewed and repairs should be performed accordingly. [441213.11]

15. **Byberry Rd. Bridge over CSX Transportation:** We do not have any recommendations as it is not a BMU maintained bridge. [441213.12]

16. **Henry Avenue Bridge over Gorgas Lane:** Inspection reports for this bridge should be reviewed and repairs should be performed accordingly. [441213.13]

17. **Calumet Street Bridge:** Inspection reports for this bridge should be reviewed and repairs should be performed accordingly. The steel beams are exposed, heavily rusted, and corroded in a few places. The abutments are losing mortar and concrete is cracking badly. These conditions do not appear to have been addressed since our 2009 report. [441213.14]

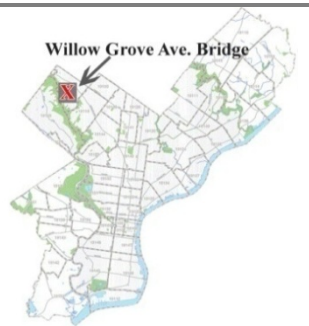
18. **Edison Avenue Bridge near Trevose Road**: The current concrete spalling should be fixed. Inspection reports for this bridge should be reviewed and repairs should be performed accordingly. [441213.15]

PHOTOGRAPHS OF CONDITIONS FOUND

WILLOW GROVE AVENUE BRIDGE

Significant corrosion of steel beams under the bridge, weakening the overall structure

Pothole created by ongoing surface damage across the bridge

BRIDGE FACTS:		
Location: Willow Grove Ave (over SEPTA)	**Weight Limit:** 3 Tons (posted)	
Year Built: 1883	**Sufficiency Rating:** 2 (structurally deficient)	
Length: 73 ft.	**Avg. Daily Traffic:** 6,880 vehicles	

BELLS MILL ROAD BRIDGE

Concrete falling from the underside of the bridge weakening the overall support

Cracking in the side wall of the bridge resulting in on-going damage

BRIDGE FACTS:		
Location: Bells Mill Rd. at Forbidden Drive (over Wissahickon Creek)	**Weight Limit:** 3 Tons (posted)	
Year Built: 1820	**Sufficiency Rating:** 40 (structurally deficient)	
Length: 67 ft.	**Avg. Daily Traffic:** 12,200 vehicles	

MASCHER STREET BRIDGE

Steel plates under the bridge that are rusting and slowly deteriorating the structure

Surface cracking, known as Alligator Cracking, is present across the bridge. Ongoing cracking that goes unrepaired results in additional future costs

BRIDGE FACTS:		
Location: Mascher Street, near Indiana Ave. (over Conrail)	**Weight Limit:** 3 Tons (posted)	
Year Built: 1931	**Sufficiency Rating:** 60.7 (structurally deficient)	
Length: 125 ft.	**Avg. Daily Traffic:** 2,000 vehicles	

STRAWBERRY MANSION BRIDGE

Large crack in the cement support under the bridge

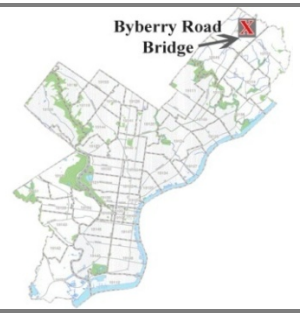
Concrete cracking in the base of the bridge

BRIDGE FACTS:		
Location: Kelly Drive and West River Rd. (over Schuylkill)	**Weight Limit:** 4 Tons (posted)	
Year Built: 1897	**Sufficiency Rating:** 18 (structurally deficient)	
Length: 1,242 ft.	**Avg. Daily Traffic:** 14,500 vehicles	

BYBERRY ROAD BRIDGE

Significant amount of concrete missing under the bridge support

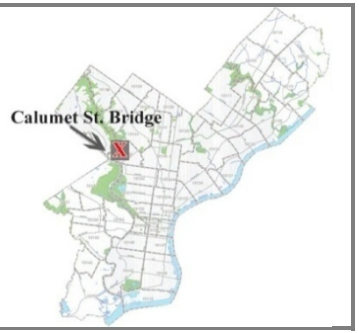
Concrete base damaged and missing sections of cement

BRIDGE FACTS:		
Location: Byberry Road (over CSX rail)	**Weight Limit:** 3 Tons (posted)	
Year Built: 1996	**Sufficiency Rating:** 3 (structurally deficient)	
Length: 140 ft.	**Avg. Daily Traffic:** 20,000 vehicles	

CALUMET STREET BRIDGE

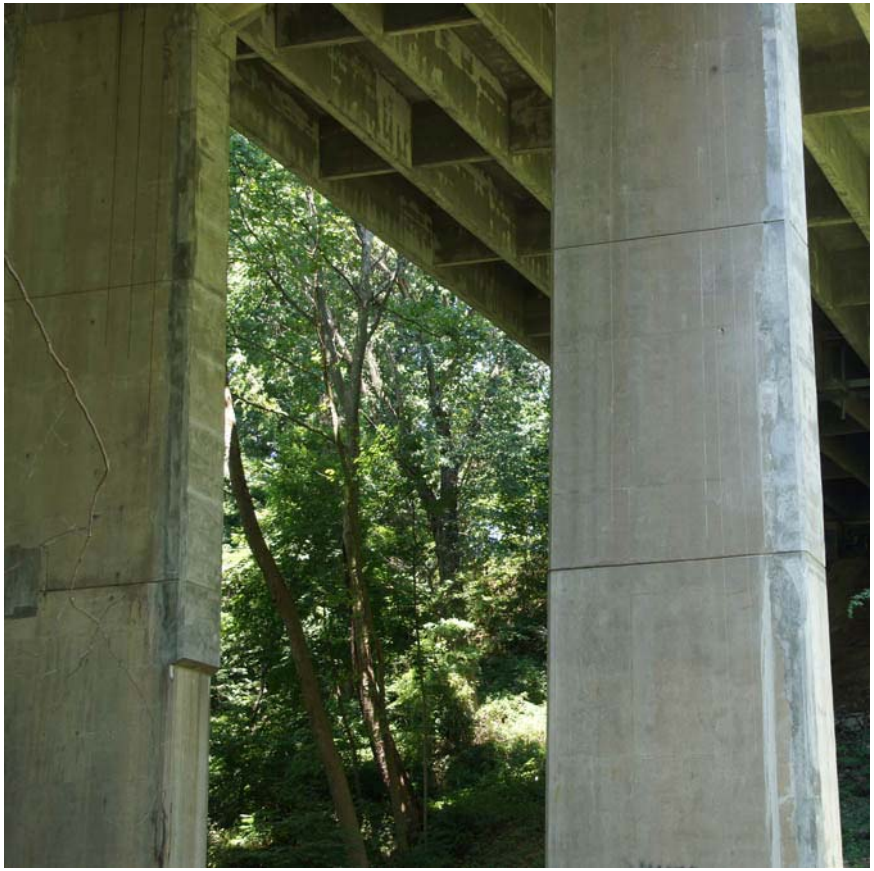
BEFORE (2009) – Spalled concrete on concrete encased beams, steel is corroded

AFTER (2013) – Spalled concrete continues on encased beams, more steel has become exposed since 2009

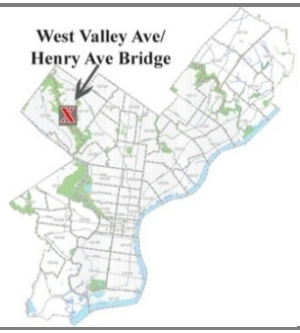
BRIDGE FACTS:		
Location: Calumet Street (over SEPTA)	**Weight Limit:** 20 Tons (posted)	
Year Built: 1925	**Sufficiency Rating:** 50 (structurally deficient)	
Length: 69 ft.	**Avg. Daily Traffic:** 400 vehicles	

WEST VALLEY AVENUE/HENRY AVENUE BRIDGE

BEFORE (2009) – Concrete spalling with exposed rebar on pier



AFTER (2013) – Concrete has been repaired and rebar is no longer exposed

BRIDGE FACTS:		
Location: Henry Ave. & Valley Ave. (over Wissahickon bike path)	**Weight Limit:** None	
Year Built: 1958	**Sufficiency Rating:** 46.5	
Length: 748 ft.	**Avg. Daily Traffic:** 14,569 vehicles	

EDISON AVENUE BRIDGE

BEFORE (2009) – Concrete spalling on each side of the bridge

AFTER (2013) – Concrete has been replaced and it is no longer spalling

BRIDGE FACTS:		
Location: Edison Avenue (over Branch of Poquessing Creek)	**Weight Limit:** 15 Ton (posted)	
Year Built: 1905	**Sufficiency Rating:** 88.3	
Length: 20 ft.	**Avg. Daily Traffic:** 1,100 vehicles	

Department of Streets Bridge Maintenance Review 2013
Streets Department Response – 9/17/2013

Prepared by
Darin L Gatti PE
Chief Engineer & Surveyor
Philadelphia Streets Department

Since the 2009 report there have been a number of changes in the Streets Department. The Chief Highway Engineer has retired and the Assistant Chief has taken over as the Acting Chief Highway Engineer. The Bridge Maintenance Unit (BMU) reports to the Chief Highway Engineer. Bridge Inspections and reports are prepared by BMU and bridge ratings are calculated by the engineers in Surveys, Design & Construction Division. Both Inspections and ratings are performed under the Professional Engineer seal of the Chief Engineer and Surveyor who has extensive experience in bridge design and construction.

We recognize that any City unit could be run better and agree that utilization of a work order system will help track prioritization of repairs and resource allocation. We are currently in the process of implementing the "City Works" system; the last step is to employ a person for data entry because BMU does not have a data entry clerk. We are currently working with Human Resources to advertise an exam for this position.

The report states that our inspection reports lacked sufficient detail to determine the progression of deterioration. We disagree with that statement as all of the bridge inspection documentation performed by BMU is in accordance with State inspection requirements. These reports are written for bridge engineers and bridge inspectors. PennDOT reviews these documents in addition to hiring consultants to perform quality control checks on our inspections. The reports are also backed up with an additional file of inspection photos which are not included in the report proper but are kept on file for reference when necessary. Each of our bridge inspectors is certified by PennDOT and attends regular training classes to maintain their certifications.

The report also states that a number of repairs suggested in 2009 have not been completed. The budget allocated to the Streets Department for maintenance of our infrastructure is limited and does not allow us to make all of the repairs and perform all the maintenance we feel is necessary to maintain our infrastructure in top condition. Because of this we have to prioritize our repairs by making critical structural repairs to keep bridges and roadways open and delaying minor repairs for when funding and manpower are available. A good example of this is the Bells Mill Rd bridge. In 2011 two major storms impacted Philadelphia (Irene and Lee). This bridge was underwater during Hurricane Irene which washed out a large section of roadway both on and adjacent to the bridge. BMU and the Highway Division analyzed the damage and made repairs that would better protect the bridge for the future. If not for this work we could have lost the bridge during Tropical Storm Lee. Since then additional repairs including re-pointing almost the entire upstream face of the bridge have been completed. Because our budget is limited, repairs made after every unexpected event means that another repair will have to be delayed until funding is available.

We also agree with the report's suggestion of flexing capital funds for bridge repairs. Although capital funds are generally not permitted to be used on maintenance, this idea will be investigated. We have also been working with PennDOT to implement two new bridge repair funding options. One is the Act 13 funding that distributes funds collected from the fracking operations to local municipalities for the use of repairing structurally deficient bridges and removing them from the Structurally Deficient List. We are currently planning to use the first of this funding on the Sedgley Ave. Bridge over Conrail. The other program with PennDOT is the packaging of several bridge repair projects into one larger project managed by PennDOT in order to make more efficient use of funds. We are still awaiting additional information on the implementation of this program.

In summary, the City's bridges could be better maintained if additional funding was available. Having a tracking system in place will assist us in showing the true cost of bridge maintenance and the need for funding to properly maintain our infrastructure.

Respectfully submitted

Darin L Gatti, PE
Chief Engineer and Surveyor
Philadelphia Streets Department