

**CITY OF HAMILTON  
INTERNAL AUDIT REPORT 2012-02  
PUBLIC WORKS - BRIDGE MAINTENANCE PROGRAM  
FOLLOW UP**

#	OBSERVATIONS OF EXISTING SYSTEM	RECOMMENDATION FOR STRENGTHENING SYSTEM	MANAGEMENT ACTION PLAN	FOLLOW UP (FEBRUARY 2014)
1.	<p><u>Bridge Inspections</u></p> <p>The <i>Ontario Public Transportation and Highway Improvement Act</i>, Regulation 104/97 Standards for Bridges, requires all bridges that are part of the road allowance (i.e. cross over City roads) to be inspected biennially under the direction of a professional engineer. Public Works has ensured that all of the 392 City owned bridges have been inspected and any required maintenance or repairs were promptly completed.</p> <p>However, there are three known privately owned bridges crossing over roads whose inspection within the past two years has not been verified by the City. One of these bridges is scheduled to be inspected by the City during 2012 (Cootes Drive). The City has not ascertained if the owners of the other two privately owned pedestrian bridges (King Street West, York Boulevard) have had them inspected as per the Act.</p>	<p>That the City obtain appropriate documentation from the owners of private bridges in order to verify that the structures were inspected and maintained in accordance with the <i>Ontario Public Transportation and Highway Improvement Act</i>.</p>	<p>Disagreed. These bridges/structures do not form part of the road allowance and thus, are out of scope. They are not the City's responsibility as the City does not inspect assets, structures, etc. that it does not own. Further, the OPTHIA (Reg 104/97) only requires inspection by the authority that caused the structure to be built (i.e. the owner).</p>	<p>No follow up work carried out due to original disagreement with recommendation.</p>

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1.	<p><u>Bridge Inspections (Cont'd)</u>  Without the verification and proof of inspections, the City runs the risk of not being able to prove its compliance with the regulations. Inspections help reduce the potential liability from falling debris or crumbling structures.</p>		<p>The City has several privately owned bridges (CNR, CPR, MTO, etc.) that cross over or under City roads that the owner will not provide and has no duty to provide any information with regard to the condition unless by agreement.</p> <p>City Facilities will be undertaking the condition assessment of the two pedestrian walkways (King Street West and York Boulevard) as they are required by agreement.</p>	

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2.	<p><u>Bridges – Golf Courses, Trails and Parks</u></p> <p>In addition to the 392 City owned bridges that are part of the road allowance, there are 52 bridges in the two City-owned golf courses and in public parks and trails that are maintained by the staff of the respective facilities. There currently is no legislated requirement for a professional engineer to inspect these bridges on a periodic basis. However, 12 of these bridges are used by vehicles. The wear and tear on the structures by vehicular traffic increases the risk of accidents and injury that may occur should the bridges fall into a state of disrepair.</p>	<p>That vehicular bridges in the City's parks and on golf courses and trails be inspected at periodic intervals by a professional engineer.</p>	<p><u>Golf Courses</u></p> <p>Agreed. Management will confirm with a Professional Engineer to have the two vehicle bridges on the golf courses inspected at periodic intervals. The cost of \$1,000 to have the vehicle bridges inspected is within the Golf Course Operating Budget. To be completed by November 2012.</p> <p><u>Trails &amp; Parks</u></p> <p>Disagreed. There is no legislated requirement for this and thus, the inspections are out of scope for the Department. The estimated cost to have engineers inspecting the 12 vehicular bridges is \$42,000.00, which would require Council approval for an increase in the Parks' budget (assuming these bridges are in parks). However, management does agree that inspections of bridges by staff are to be performed at periodic intervals. Based on demonstrated need through these inspections, an engineer will be hired on a case-by-case basis.</p>	<p>Initiated. Bridges at one golf course have been inspected by a professional engineer and identified bridges to be replaced in 2014 were identified. However, inspections have yet to be performed at the second golf course.</p> <p>Completed. Inspections of vehicular bridges on the City's trails and parks are to be conducted by staff a minimum of once per year. A review of inspections conducted on three of the twelve vehicular bridges confirmed periodic inspections had been conducted by staff and there was no demonstrated need for an engineer to be hired.</p>

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2.	<p><u>Bridges – Golf Courses, Trails and Parks (Cont'd.)</u></p> <p>There is no finalized procedure for the inspections of the bridges at the golf courses, trails and parks to ensure they are safe and properly maintained. Without appropriate guidelines and expectations, it may be difficult for management to hold staff accountable for such work. In addition, new staff would not have consistent, written guidelines to which they could refer.</p>	<p>That management finalize and approve the procedures for inspections of the bridges at the golf courses, trails and parks. Once issued, these documents should be reviewed on a regular basis (annually) and revised, as required.</p>	<p><u>Golf Courses</u></p> <p>Agreed. Management will finalize and approve the procedures for inspections of the bridges at the respected golf courses. The documents will be reviewed on a regular basis (annually) and revised, as necessary. To be completed by November 2012.</p> <p><u>Trails &amp; Parks</u></p> <p>Agreed. The procedure for bridge inspection is currently being developed and implementation is to begin in the summer of 2012. A full assessment of all the parks' and trails' bridges is being conducted in 2012 by Asset Management.</p>	<p>Not Completed. Bridge inspection procedures at the golf courses have not been formally documented.</p> <p>Completed. The "Bridge Inspection Procedure for Parks and Cemeteries" has been finalized and approved by management. Evidence of regular review through staff training was provided.</p>

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3.	<p><u>Procedures for the Prioritization of Bridge Projects</u></p> <p>The Asset Management section of the Environment and Sustainable Infrastructure (ESI) division has developed a procedure explaining how bridge projects requiring rehabilitation or replacement are prioritized. However, there are a variety of factors which are considered when deciding on which projects to complete first. The procedure does not provide for a weighting of factors and ESI management and staff use their experience and judgment when applying the factors.</p> <p>The Operations and Maintenance section of Roads Operations division, which primarily deals with or oversees repairs and maintenance under \$50,000, does not have a procedure that includes how it prioritizes the bridge work that it undertakes.</p> <p>When there are unclear or no written procedures to refer to, the employee carrying out the process relies on personal understanding and experience which could result in incorrect, incomplete or inconsistent application. It would also be problematic and inefficient for a successor to commence his/her duties within a short period of time.</p>	<p>That the ESI Asset Management section clarify the existing procedure for selecting and prioritizing the bridge projects requiring rehabilitation or replacement by including detailed factors and their weighting, as needed.</p> <p>That the Operations and Maintenance section develop and implement a detailed procedure that includes the process for prioritizing the bridge projects requiring maintenance.</p>	<p>Agreed. The process is ongoing and will be completed by the end of Q3, 2012.</p> <p>Agreed. The Operations and Maintenance section will prepare a procedure which formalizes their current approach of using provincial best management practices and professional judgment.</p>	<p>Completed. The procedure for selecting and prioritizing the bridge projects requiring rehabilitation or replacement includes weighting criteria based on the structures' attributes, functions and characteristics.</p> <p>Not Completed. A risk score is being used to rank deficiencies. However, professional judgment is still used in the final prioritization of maintenance work. A formalized procedure has not been developed or implemented.</p>