



Action Plan for Metrolinx Transit Construction Contract Awarding and Oversight

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Executive Summary

In the past five years, Metrolinx has spent approximately \$4.1 billion to complete more than 520 construction projects within the Greater Toronto and Hamilton Area. Metrolinx trains and buses have about 69 million passenger boardings annually. Metrolinx operates trains on about 460 route kilometers on seven train lines. Trains and buses connect cities through 65 train stations and 15 bus terminals spanning from Hamilton in the west, Barrie in the north, Oshawa in the east and Lake Ontario in the south. In addition, there are about 70,000 parking spots in 10 multi-level parking garages and 139 surface parking lots. Throughout the entire network, there are about 470 bridges for pedestrians and trains.

Over the period reviewed by the Auditor General's Office, Metrolinx's annual capital investment, including construction costs, more than doubled. Metrolinx has taken measures over this period to continue to improve its controls over this program, including the implementation in 2015 of a vendor performance management system, continued use and evaluation of the Canadian Construction Documents Committee (CCDC) common contractual terms, stronger terms around project safety, the ability for Metrolinx to use references from Metrolinx projects when evaluating a contractor's tender submission, and adoption of rights of exclusion (for example, rights not to award based on poor performance) in Metrolinx's tendering process.

In 2014, Metrolinx merged the GO Transit Capital Infrastructure team with the Metrolinx Rapid Transit Implementation team to bring together expertise in project delivery, program management and quality assurance. The new Capital Projects Group (CPG) is working to implement a best-in-class program able to deliver on the region's most significant transit projects. CPG is currently working to share lessons learned and best practices from its Rapid Transit initiatives, and best practices implemented by Infrastructure Ontario over the last ten years, to infuse them into its active projects (including the Regional Express Rail program) to ensure quality, schedule and "value for money" are achieved when delivering capital projects. The updated processes being implemented will guide daily operations across CPG.

Metrolinx is also completing the transformation of its Procurement Services team to strengthen its procurement processes. This includes the implementation of an industry leading Vendor Performance Management (VPM) system. The enhanced VPM System will enable Metrolinx to optimize value-for-money by incenting good contractor performance and by considering past contractor performance when awarding future work.

Metrolinx is also proactively implementing the Certificate of Recognition (CORTM) program as a mandatory requirement on all construction procurements. COR is a leading industry safety standard that ensures the contractor has in place a comprehensive health and safety management system.

Following the release of the Auditor General of Ontario's Review of Metrolinx Construction Procurement and Oversight in November 2016, Metrolinx developed an action plan to respond to the 17 recommendations proposed in the Auditor's review.

The plan has two components:

1. Actions for the 2017 construction season and;
2. Longer-term actions to be implemented for the 2018 construction season and beyond.

The action plan will help to ensure that Metrolinx optimizes value-for-money in the delivery of its construction program.

The Report's 17 recommendations can be consolidated into five major themes defined below. The plan includes actions to:

1. Address Contractor and Design Consultant Errors, Performance Issues, and Delays

Projects must provide value-for-money to Ontarians and meet key design and regulatory standards. Further, projects must be completed on time and on budget. Metrolinx will continue to ensure this by:

- Enhancing processes to identify and document design non-compliance (e.g. errors and omissions). These processes will monitor and encourage consistency in comments and adequate documentation, with auditing against agreed upon resolutions.
- Enhancing processes and procedures so that any construction cost changes due to design errors and omissions will be identified, reviewed, documented and assessed for cost recovery.
- Completing an internal review to ensure alignment of current deficiency identification and remediation practices against industry standards.
- Implementing training and procedures to ensure staff responsible for administering warranties use consistent methods, requirements, and timelines for remedying deficiencies.
- Developing a process to objectively calculate liquidated damages for each project so these clauses can more consistently be included in contract requirements and imposed when contractors fail to meet project timelines.

2. Enhance Oversight Practices to Strengthen Contractor Safety Practices

Safety is a key priority during all construction activities. Metrolinx will ensure continued safety on its projects by:

- Continuing to implement the Certificate of Recognition (COR™) program as a mandatory requirement on all construction procurements.
- Including key performance indicators related to vendor safety practices on all vendor scorecards on an ongoing basis.
- Including safety audit reports as supporting documentation during the vendor evaluation process on a contract-by-contract basis.
- Requiring contractors to develop remedial plans for issues and non-compliance noted in safety audits, and have Metrolinx personnel complete detailed follow-up on all safety audits periodically to verify that the action plans have been implemented.
- Implementing a computerized system to capture all VPM data consistently in order to take contractors' past safety performance into consideration in the awarding of contracts (Note: this assessment would have been completed manually in the past).

3. Consistently Consider Past Vendor Performance in Contract Award Decisions

Metrolinx needs to ensure its contractors meet the required quality, schedule and “value for money” deliverables. Ongoing evaluation of vendor performance, with adequate consideration of past performance in contract award decisions, supports value-for-money and significantly increases the likelihood of key outcomes being achieved. Metrolinx will ensure adequate management of contractor performance by:

- Rating contractor performance through the VPM system based on the quality of their work, and the work of their sub-contractors. Poor past performance according to the VPM rating will be considered in contract award decisions.
- Inputting baseline data into the VPM software tool to facilitate the full utilization of the VPM system to manage vendor performance including considering past performance when evaluating contractors' tender submissions and awarding new work. VPM outputs will progressively become available for use across all work categories through 2017.
- Tracking and using individual project closeout reports and identifying any recurring issues around remediation of deficiencies in order to include these considerations as part of the vendor scorecard evaluation process so that this information is included in the vendors rating in the VPM system.

4. Enhance Construction Vendor Monitoring Practices

Vendor monitoring practices help ensure potential construction issues are detected early, and projects are completed on time and on budget. Ongoing validation of

costs and work completed also supports financial accountability. Metrolinx will continue to ensure this by:

- Implementing a centralized contract management system that includes a claims tracking mechanism from receipt of a claim notice to its resolution.
- Implementing a dispute resolution process whereby Metrolinx staff who are independent from the project team will review claims filed by consultants or contractors and will ensure the results of all reviews are tracked centrally.
- Implementing scheduling procedures in new contracts going forward.
- Implementing a Quality Management Program (QMP) that requires every consultant, contractor, and sub-contractor to submit a quality management plan detailing how that firm ensures quality products and services. This will be reviewed by Metrolinx to ensure a complete and robust plan. Contractors will be audited against the QMP to ensure contractor compliance and quality construction activities.
- Conducting audits on CN invoices as allowed under its long-term contract. Initiate discussions with CP on level of detail provided in invoices to ensure alignment with contractual terms and comparable industry rates.
- Reviewing the need for a Metrolinx-contracted inspector on CN and CP construction sites, or retaining a third party to complete quality assurance inspections throughout CN and CP projects.
- Continuing to implement harmonized procedures to provide a consistent and comprehensive review process that includes obtaining detailed information to verify construction estimates and charges.
- Implementing upgrades to the accounts payable system, including the partial automation of controls to ensure the closeout of purchase orders once projects are complete; and, completing a review of current purchase orders to identify and close purchase orders that are complete.

5. Strengthen Contract Requirements

Strong contractual terms help mitigate the risk of disputes, provide clarity in construction projects, and help ensure value-for-money in the use of public funds. Metrolinx will continue to ensure this by:

- Initiating discussion with CN regarding renegotiation of the Master Construction Agreement to ensure that contractual terms remain current with industry standards and help to ensure value-for-money. Any proposed changes to the agreement are subject to negotiation with CN.

- Identifying and implementing contract provisions that will allow it to address consultants that do not meet project timelines (e.g. liquidated damages clauses, construction payment holdbacks).
- Implementing contractual requirements for a maximum percentage of work that can be subcontracted for delivery of work.

Details of Action Plan

For each recommendation, the action plan outlines the areas Metrolinx reviewed and the resulting actions that have been taken, are underway, or are planned. Each of these activities is designed to ensure that Metrolinx delivers value-for-money in its construction activities, with the highest regard for public, employee, and contractor safety.

Recommendations 1-3: Identifying, Tracking, and Recovering Costs Associated with Consultants' Design Errors and Omissions

Key areas of review:

- Strengthening designs to reduce risk of cost overrun
- Recovering costs resulting from design errors and omissions
- Processes supporting identification, assessment, and recovery of costs resulting from design errors and omissions

Metrolinx has already:

- Developed a more stringent tender process (i.e. using Request for Qualified Quotations), which puts an emphasis on awarding the contract based on qualifications (i.e. previous experience, qualifications of each design discipline, and minimum years of experience) rather than simply choosing the lowest bidder.
- Started awarding contracts on an evaluation weighting of 75% and 25% for qualifications and price respectively.
- Started transferring more risk to contractors through the more frequent use of design-build contracts to transfer risk to contractors.
- Begun developing a feasible, cost-effective and timely resolution process to address errors or omissions discovered during the construction phase, including potential errors and omissions claims. Metrolinx will continue to seek compensation where warranted.
- Implemented the VPM system, which addresses continued issues with design consultants by documenting vendor's performance for consideration during future tenders.

By the end of the 2017 construction season, Metrolinx will:

- Provide ongoing training to staff on claims and dispute resolutions procedures and contract management procedures previously developed to clarify processes and roles.
- Have processes in place to support design compliance, including the identification and documentation of non-compliance (e.g. errors and omissions). These processes will identify the parties responsible for the technical review, and monitor and encourage consistency in comments, schedule comment resolution meetings, and document and audit against agreed-upon resolutions.
- Ensure full optimization of the VPM software tool by increasing the amount of available data in the system, thus improving its procurement evaluation and award processes. This data will be current across all contracting categories, further improving the system's ability to consider contractors' past performance when awarding new work.

For the 2018 construction season and beyond, Metrolinx will:

- Further enhance consistency in design and ensure quality compliance through finalization of a reporting and responsibility matrix, implementation of related processes, and training for impacted staff.
- Provide ongoing training on the Contract Management System.
- Have enhanced processes and procedures so that any construction cost changes due to design errors and omissions will be reviewed, documented and assessed for cost recovery.

Recommendation 4: Design Consultants Not Meeting Deadlines

Key areas of review:

- Project design delays
- Design consultant performance
- Strengthening contractual terms

Metrolinx has already:

- Implemented a VPM system in 2015 that considers contractor's past performance in the award of new contracts.
- Implemented a scheduling management tool with dedicated schedulers and planners within each of the teams responsible for managing capital project delivery.

By the end of the 2017 construction season, Metrolinx will:

- Enhance existing contract provisions that address poorly performing consultants that do not meet project timelines (e.g. liquidated damages clauses, construction hold-backs).
- Ensure full optimization of the VPM software tool by increasing the amount of available data in the system, thus improving its procurement evaluation and award processes. This data will be up-to-date and current across all performance/contracting categories, further improving the system's ability to assess contracts.

For the 2018 construction season and beyond, Metrolinx will:

- Implement scheduling requirements in all new contracts going forward.

Recommendation 5: Tracking Contractor Performance and Considering Performance in Award Decisions

Key areas of review:

- Procurement award processes
- Contractor performance tracking and management
- Contract management practices
- Contractor safety issues

Metrolinx has already:

- Introduced the ability to review references that do not form part of a vendor submission, including references from Metrolinx, municipalities, or government agencies and ministries. Contract awards are denied based on this information, when significant concerns are identified.
- Implemented a VPM program which evaluates performance of vendors on current contracts and generates individual performance scores which will be included in the evaluation of future bids in order to drive continuous vendor improvement and influence the award of future contracts.
- Proactively ensured contractor safety performance by implementing the Certificate of Recognition (CORTM) program as a mandatory requirement on all construction procurements over \$10M. COR is a leading industry safety standard which ensures that the contractor has in place a comprehensive health and safety management system.

By the end of the 2017 construction season, Metrolinx will:

- Use first outputs from the VPM system to include vendor past performance in the evaluation of tenders. VPM output will progressively become available for use across all work categories during the year.
- Ensure full optimization of the VPM software tool by increasing the amount of available data in the system, thus improving its effectiveness when using contractor past performance to evaluate tender submissions and award new work. This data will be up-to-date across all contracting categories, further

- improving the system's ability to consider contractor past performance when awarding new work.
- Include key performance indicators related to vendor safety practices on all vendor scorecards on an ongoing basis.
 - Include safety audits reports as supporting documentation during the vendor evaluation process on a contract-by-contract basis.

For the 2018 construction season and beyond, Metrolinx will:

- Continue to roll-out COR safety requirements on all construction contracts irrespective of value.

Recommendation 6: Addressing Poor Contractor Safety Performance

Key areas of review:

- Maintaining a safe construction environment on Metrolinx projects
- Addressing contractor safety performance

Metrolinx has already:

- Established a Construction Safety Management Program that includes mandatory safety training for all workers doing construction on rail corridors. Over 20,000 workers have been trained, and safety infractions can result in revocation of the ability to work on Metrolinx projects.
- Implemented contractual remedies, including strict requirements to address issues where safety breaches occur to ensure compliance with safety regulations and reduce the risk of safety violations.

By the end of the 2017 construction season, Metrolinx will:

- Complete detailed follow-up on all safety audits.
- Require contractors to develop remedial plans and Metrolinx will conduct and document the results of follow-up audits to verify that the action plans have been implemented.
- Include key performance indicators related to vendor safety practices on all vendor scorecards on an ongoing basis.
- Include safety audit reports as supporting documentation during the vendor evaluation process on a contract-by-contract basis.
- Implement a computerized system to capture all VPM data consistently in order to take contractors' past safety performance into consideration in the award of contracts (Note: this assessment would have been completed manually in the past).

Recommendation 7: Addressing Contractor Delays and Late Delivery of Work

Key areas of review:

- Performance tracking and management
- Contract management practices
- Contractor performance
- Project delays

Metrolinx has already:

- Liquidated damages clauses are part of the standard template contract terms, and are included in construction contracts when deemed appropriate and effective.
- Implemented a scheduling management tool with dedicated schedulers and planners within each of the teams responsible for managing capital project delivery.

By the end of the 2017 construction season, Metrolinx will:

- Implement scheduling requirements in all new contracts going forward.

For the 2018 construction season and beyond, Metrolinx will:

- Develop and document a process to objectively calculate liquidated damages for each project so these clauses can more consistently be included in contract requirements and imposed when contractors fail to meet project timelines.

Recommendation 8: Addressing Construction Deficiencies

Key areas of review:

- Contract management practices
- Contractor performance
- Contractor performance management
- Fixing deficiencies

Metrolinx has already:

- Developed a project completion and handover checklist that contains a list of key requirements and items for handover.
- Developed a contract completion and close-out procedure.

By the end of the 2017 construction season, Metrolinx will:

- Complete an internal review to ensure alignment of current practices against industry standards.
- Track and use individual project close-out reports, and identify any recurring issues around remediation of deficiencies for inclusion in the VPM system.

For the 2018 construction season and beyond, Metrolinx will:

- Implement training and procedures to ensure staff responsible for administering warranties use consistent methods, requirements, and timelines for remedying deficiencies.

Recommendation 9: Addressing Poor Sub-contractor Performance

Key areas of review:

- Performance tracking and management
- Contract management practices
- Sub-contractor performance
- Project delays

Metrolinx has already:

- Introduced a requirement for contractors to provide a list of all sub-trades completing major construction activities within five business days of contract execution.

By the end of the 2017 construction season, Metrolinx will:

- Rate contractor performance based on the quality of their work, and the work of their sub-contractors through the VPM system. Poor performance will be considered in contract award decisions.

For the 2018 construction season and beyond, Metrolinx will:

- Implement a Metrolinx Quality Management Program (QMP) that requires every consultant, contractor, and sub-contractor to submit a quality management plan detailing how that firm ensures quality products and services. This will be reviewed by Metrolinx to ensure a complete and robust plan. Vendors will be audited against their QMP to ensure compliance to delivering quality.

Recommendation 10: Limiting Sub-contractor Work to Prevent Delays and Minimize Performance Issues

Key areas of review:

- Performance tracking and management
- Contract management practices
- Sub-contractor performance
- Project delays

Metrolinx has already:

- Introduced contract provisions that obligate the contractor to ensure performance of its sub-trades.

By the end of the 2017 construction season, Metrolinx will:

- Rate contractor performance through the VPM system based on the quality of their work, and the work of their sub-contractors. Poor performance according to the VPM rating will be considered in contract award decisions.
- Have formalized the procedure to confirm that there are no liens before release of payment. Staff has now begun completing lien validation as part of their payment approval process.
- Implement contractual requirements for a maximum percentage of work that contractors can subcontract for delivery of work.

Recommendation 11: Ensuring Key Project Requirements are met before Handover

Key areas of review:

- Performance tracking and management
- Contract management practices
- Project delivery and handover

Metrolinx has already:

- Implemented a project completion and handover checklist that contains a list of key requirements and items for handover.

By the end of the 2017 construction season, Metrolinx will:

- Solidify formal processes and procedures for contract administration, including invoice review and approval for capital infrastructure contracts.
- Provide training to all staff on new policies and procedures, including requirements prior to project handover.

Recommendation 12: Implementing Key Contractual Terms to Prevent Delays and Performance Issues (including Claims Tracking, Work Orders, and Dispute Resolution)

Key areas of review:

- Performance tracking and management
- Contract management practices
- Contractor performance
- Project delays

Metrolinx has already:

- Worked collaboratively with consultants, contractors, and legal counsel to develop a feasible, cost effective, and timely resolution to current and future claims and performance issues, and will continue to do so.
- Introduced contract provisions that include clauses that give the right to issue a mandatory work order to contractors.
- Initiated an interim solution claims tracking mechanism as of July 2016 to allow claims tracking in an Excel based log.

By the end of the 2017 construction season, Metrolinx will:

- Add all active contracts to the Contract Management System and ensure proper access is given to those required.
- Implement invoice review and approval processes for each contract in the system.
- Implement a dispute resolution process whereby Metrolinx staff who are independent from the project team will review claims filed by consultants or contractors and will ensure the results of all reviews are tracked centrally.

For the 2018 construction season and beyond, Metrolinx will:

- Implement a centralized contract management system, which includes a claims tracking mechanism from receipt of a claim notice to its resolution.
- Determine the appropriate percentage of additional holdback beyond the 10 percent outlined in the Lien Act to cover the cost of any deficiencies not completed by the contractor.

Recommendation 13: Enhancing Financial Systems

Key areas of review:

- Financial accountability
- Payment authorization and processing

Metrolinx has already:

- Put manual processes in place to ensure that payments are appropriately processed.

By the end of the 2017 construction season, Metrolinx will:

- Add all contracts to the Contract Management System, and ensure proper access is given to those required.
- Implement contract administration processes, including invoice review and approval for each contract in the system. Complete a review of purchase orders to identify and close purchase orders that are complete.

For the 2018 construction season and beyond, Metrolinx will:

- Implement upgrades to the accounts payable system, including partial automation of controls to ensure the closeout of purchase orders once projects are complete.

Recommendation 14-16: Verification of Construction Estimates and Costs for CN and CP Contracts

Key areas of review:

- Financial accountability and invoice review
- Review of contract estimates
- Contractor financial tracking and management
- Contract management practices

Metrolinx has already:

- Implemented harmonized procedures to provide a consistent and comprehensive review process that includes obtaining detailed information to verify construction estimates and charges.

By the end of the 2017 construction season, Metrolinx will:

- Implement contract administration processes including invoice review for each contract in the system.
- Complete training on new procedures across Metrolinx staff.

For the 2018 construction season and beyond, Metrolinx will:

- Conduct audits on CN invoices as allowed under its long-term contract and will negotiate with CP to incorporate the allowance of audits on CP invoices and ensure audits are conducted.
- Review the need for a Metrolinx-contracted inspector on CN and CP construction sites, or retaining a third party to complete quality assurance inspections throughout CN and CP projects.

Recommendation 17: Negotiating Mark-up Rates for CN and CP Contracts

Key Areas of review:

- Contract management practices
- Financial Accountability

Metrolinx has already:

- Initiated discussion with CN regarding renegotiation of the Master Construction Agreement to ensure that contractual terms remain current with industry standards and help to ensure value-for-money. Any proposed changes to the agreement are subject to negotiation with CN.

By the end of the 2017 construction season, Metrolinx will:

- Initiate discussions with CP on level of detail provided in invoices to ensure alignment with contractual terms and comparable industry rates.

Acceptance & Sign-Off

Recommended By:	<i>Robert Siddall</i> <i>Chief Financial Officer</i> <i>Metrolinx</i>	Original Signed by Robert Siddall <i>Signature</i>	February 14, 2017 <i>Date</i>
Recommended By:	<i>John Jensen</i> <i>Chief Capital Officer</i> <i>Metrolinx</i>	Original Signed by John Jensen <i>Signature</i>	February 14, 2017 <i>Date</i>