



**Office of the Auditor General: Follow-up to the
2013 Audit of Infrastructure Services Department
– Technical Management, Tabled at Audit
Committee – June 14, 2018**

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Executive summary

The 2013 Audit of Infrastructure Services Department¹ (ISD) – Technical Management was presented to Audit Committee and Council in 2015. The Audit examined the technical processes associated with the projects that ISD delivers for the City.

Our original audit reviewed compliance with Federal and Provincial guidelines and regulations, as well as with the objectives of the City's Comprehensive Asset Management (CAM) Program. It also looked at the structure of the department, processes and control systems used in the delivery of projects, selection of consultants and contractors, and overall project management and monitoring. Finally, it reviewed the processes used for control of change orders and costs in design and construction.

The key findings of the original audit were:

- ISD operated with due compliance with the Federal and Provincial guidelines and regulations that directly pertained to its activities. Furthermore, the mandate and scope of responsibilities of Infrastructure Services were not duplicated in other departments within the City.
- Council approved the Comprehensive Asset Management (CAM) Program in October 2012. ISD indicated at that time that an update would be provided at the same time as the refresh to the Long Range Financial Plan (LRFP) so that the CAM report would provide the basis for the LRFP update.
- The Project Delivery Manual (PDM) prepared by ISD provided detailed step-by-step direction to the ISD Design and Construction branches for the delivery of projects, including sample documentation for the various tasks that project managers must execute. However, our review indicated that these processes were not being consistently followed.
- The PDM was provided to consultants working for the City, but it was not referenced in the contracts' Terms of Reference, and therefore, its use was not a formal requirement of consultants.

¹ Effective 2016, Infrastructure Services is a branch of the Planning, Infrastructure and Economic Development Department.

- The Project Status Updates (PSU) are intended to help inform Councillors of the projects within their wards. However, Councillors were not receiving the same dashboard information that was being provided to the General Manager.
- Change orders were generally required when field conditions differed from those expected in the design phase. Detailed change order data was kept for each specific project. However, there was no centralized summary of change order amounts that summarized the total sum of change orders per project that could be reviewed by the managers and General Manager.
- Discussions with managers and program managers showed that the selection and assignment of project managers was based on workloads and the competencies of the project managers. However, ISD did not maintain a database of the skills, experience and specialized training of its program and project managers.
- There were potential cost savings to be realized by adding construction supervisors and inspectors to undertake contract administration and inspection duties of a larger proportion of projects, in lieu of consultants.

Table 1: Summary of status of completion of recommendations

Recommendations	Total	Complete	Partially complete	Not started	No longer applicable
Number	8	2	5	1	-
Percentage	100%	25%	63%	12%	-

Conclusion

Management has completed two of the eight recommendations and obtained an extension from Council for one of the partially completed recommendations.

Management has made significant progress on the four other partially completed recommendations. Three of the recommendations are awaiting the implementation of Infrastructure Services’ new project management software, vISion, planned for the second quarter of 2018. The last partially completed recommendation is related to the staff Competency Development program, which is pending approval.

Work on Infrastructure Services' update to its Competitive Service Delivery Review has not yet started. It is planned once an evaluation of the organizational approach to quality management is complete.

Only fully implementing 25% of the audit's recommendation since 2015 could suggest a lack of sufficient focus on management's part. However, the Office of the Auditor General (OAG) did not find that to be the case. Management is implementing a new software system to support its project delivery practices, and we recognize that this is a significant undertaking.

Acknowledgement

We wish to express our appreciation for the cooperation and assistance afforded the audit team by management.

Detailed report – Assessment of implementation status

The following information outlines management's assessment of the implementation status of each recommendation as of December 15, 2017 and the Office of the Auditor General's (OAG) assessment as of March 2018.

Recommendation #1

Table 2: Status

Management update	OAG assessment
Partially complete	Partially complete

Audit recommendation:

That the City complete the Service-based Asset Management Plans and levels of service as soon as possible.

Original management response:

Management agrees with this recommendation. As part of the City's draft 2015-2018 Strategic Priorities, advancing the Comprehensive Asset Management (CAM) Program has been identified as a Term of Council priority. This includes undertaking Service-based Asset Management Plans and levels of service for all service areas by the end of Q4 2018.

Management update:

Implementation of this recommendation is partially complete.

In June and September 2017, Council approved the update to the Comprehensive Asset Management (CAM) Program and the City's Long Range Financial Plan (LRFP). As part of this update, Council approved a Strategic Asset Management Plan and key next steps. These key next steps include the development of Service-based Asset Management Plans and levels of service. With the initial focus on developing the Strategic Asset Management Plan and given the higher level of effort required to complete the Service-based Plans and levels of service, the timeline has been extended to 2020, as noted in the Council reports.

OAG assessment:

Infrastructure Services completed a Strategic Asset Management Plan (SAMP) as a part of the Comprehensive Asset Management (CAM) that was approved by Council on June 14, 2017. On September 27, 2017, Council approved the CAM companion report that addressed future updates to the SAMP and extended the timeline to 2020.

Recommendation #2

Table 3: Status

Management update	OAG assessment
Complete	Complete

Audit recommendation:

That for the hiring of consultants, the City modify its procedures and/or the contract terms and conditions to include wording that the hourly, per diem or other unit rates offered by the proponent for call-ups greater than \$150,000, the hourly, per diem or other unit rates will be discounted by a minimum of ten per cent (10%).

Original management response:

Management agrees with the recommendation.

Finance Department/Supply Branch will revise the standing offer effective Q2 2016.

Management update:

Implementation of this recommendation is complete.

The recommended discounts went into effect April 1, 2016.

OAG assessment:

OAG reviewed a recent Request for Standing Offer and confirmed that it included the required discount clause.

Recommendation #3

Table 4: Status

Management update	OAG assessment
Partially complete	Partially complete

Audit recommendation:

That ISD ensure that the procurement process for consultants includes the requirement that the Project Delivery Manual be followed.

Original management response:

Management agrees with this recommendation. ISD, in consultation with Finance Department/Supply Branch, will amend the procurement process to emphasize the requirement for consultants to follow the department’s policies, procedures and guidelines that relate to ISD project delivery. This will be completed by Q4 2015.

Management update:

Implementation of this recommendation is partially complete.

Consultants are already required to follow City guidelines, standards and procedures. The ISD Project Delivery Manual will be reinforced and communicated to the consulting industry through Release 3 of the Integrated Departmental Management Plan (IDMP) Program in 2018.

OAG assessment:

OAG confirmed that Infrastructure Services includes references to numerous City policies and procedures within contracts’ Terms of Reference (ToR). The ToR’s are not standard across all contracts. The most recent contract terms included references to the rollout of CA-PPM (i.e. vISion). Infrastructure Services is building the new vISion program based on the Project Delivery Manual (PDM). Management has indicated that with the 2018 release of vISion, all contractors will be required to follow the relevant City policies that underlie the vISion software, although they have not yet determined how they will reflect this requirement in the contract.

Recommendation #4

Table 5: Status

Management update	OAG assessment
Partially complete	Partially complete

Audit recommendation:

That ISD ensure that the requirements of the Project Delivery Manual are being completed.

Original management response:

Management agrees with this recommendation. Through the department's Integrated Departmental Management Plan (IDMP) Program, there will be a continued effort to enhance compliance with the requirements of the Project Delivery Manual (PDM). The PDM will be going through another significant update by Q2 2017.

Management update:

Implementation of this recommendation is partially complete.

Through the IDMP, Infrastructure Services has been enhancing project delivery practices. Releases 1 and 2 of the IDMP implemented in 2015 and 2016 have focused on key project delivery and scope management practices. Release 3, planned in 2018, will implement a new system (CA-PPM and SharePoint) that will result in increased consistency in the application of project requirements. The Project Delivery Manual will be updated periodically to reflect the most current requirements.

OAG assessment:

Infrastructure Services plans to address adherence to the PDM process through vISion's stage gate system. The PDM process has five main project stages: Initiation, Planning, Design, Implementation and Closeout. Within each stage, there are specific stage gates and mandatory deliverables directly related to the particular stage of the project.

Infrastructure Services' project managers are required to select an appropriate template based on the type of project. The template selected dictates the content of the stage gates. The project managers must complete all template-specific stage-gate procedures and submit them for approval by program managers and other Infrastructure Services' managers. Project managers will be able to proceed through stage gates prior to approval in order to keep the project on track.

The approval tracking function within vISion will ensure that stage completion and the corresponding sign offs are retained. The vISion system has been designed and is projected to be released during Q2 2018. OAG reviewed the design of vISion to confirm this functionality.

Recommendation #5

Table 6: Status

Management update	OAG assessment
Partially complete	Partially complete

Audit recommendation:

That ISD develop and maintain a database of training, skills and experience for the program managers and project managers.

Original management response:

Management agrees with this recommendation. ISD will continue to leverage SAP as the database for training. Through the Competency Development Project as part of the department's Integrated Departmental Management Plan (IDMP) Program, processes will be enhanced to track skills and experience of project delivery staff. The Competency Development Project will be completed by Q2 2017.

Management update:

Implementation of this recommendation is partially complete.

Infrastructure Services continues to track staff training in SAP. Infrastructure Services is currently updating the competency profile for project managers. Part of this work will determine the process for improving the tracking of skills and experience of project delivery staff. This work is expected to be completed by end of 2018.

OAG assessment:

OAG confirmed that Infrastructure Services uses SAP to track staff training. Infrastructure Services is also creating a Competency Development program, and we reviewed the framework of the program. The framework contains specific sections on the development of Infrastructure Services' staff. The entire framework has not yet been approved by the Infrastructure Services' management team. Infrastructure Services plans to use the training data in SAP and the project history in vISion as a part of the Competency Development program.

Recommendation #6

Table 7: Status

Management update	OAG assessment
Complete	Complete

Audit recommendation:

That the City arrange for the Project Status Update and Dashboard to be provided to Councillors on a monthly basis, highlighting any areas of concern.

Original management response:

Management agrees with this recommendation. Project status updates have been provided monthly to Councillors since Q2 2012. The dashboard document was originally used as an internal management tool. The project status update will be amended to highlight any areas of concern currently contained in the dashboard by Q2 2016. In addition, there is greater oversight by Executive Committee (EC) due to the requirements under the ‘Project Status Report for EC’ to report on a quarterly basis.

Management update:

Implementation of this recommendation is complete.

The project status updates, provided to Councillors on a monthly basis, were amended in July 2016 to highlight status related to project scope, budget, schedule and quality.

OAG assessment:

OAG reviewed the Project Status Update (PSU) manual, which directs project managers to include all four identified areas of interest (scope, budget, schedule, and project quality) in their updates. Infrastructure Services’ staff create and transmit PSU’s to Councillors on a monthly basis. OAG reviewed an example PSU provided to one Councillor for December 2017 and observed that all required areas of interest were included.

Recommendation #7

Table 8: Status

Management update	OAG assessment
Partially complete	Partially complete

Audit recommendation:

That the City modify the project control system to permit the General Manager and the managers to obtain summaries at department and branch levels of all the change orders and their potential impact on project budgets.

Original management response:

Management agrees with this recommendation. Project controls will be amended in SAP to enhance the ability of the General Manager and managers to obtain summaries of project change orders. The amendments will be completed by Q4 2015.

Management update:

Implementation of this recommendation is partially complete.

Enhancements have been made to the change order approval process, including defined authority levels and the requirement to document the change order rationale. This includes provisions for design errors and omissions that could result in cost recovery. These enhancements are being integrated into Release 3 of the IDMP in 2018. Improvements to financial reporting of change orders will be completed by end of 2018.

OAG assessment:

The new vISion program will include a significant amount of information on change orders including the rationale and the approval. OAG confirmed that the functional design of change-order tracking in the system includes the expected and actual costs of each change order. The system’s functionality also includes the ability to generate summary reports at various levels. After the release of vISion, Infrastructure Services plans to work with Financial Services to use SAP to track the financial impact of change orders on Infrastructure Services’ overall budget.

Recommendation #8

Table 9: Status

Management update	OAG assessment
Partially complete	Not started

Audit recommendation:

That the City undertake an evaluation of the potential cost savings of increasing the inspection staff to meet City needs for inspections, in lieu of using consulting firm staff.

Original management response:

Management agrees with this recommendation. In 2008, ISD completed a Competitive Service Delivery Review (CSDR). This review has guided the department in terms of services most effectively delivered by internal staff versus external consultants. The CSDR will be refreshed by Q4 2018 after completion of the department's Integrated Departmental Management Plan Program.

Management update:

Implementation of this recommendation is partially complete.

After Release 3 of the IDMP in 2018, Infrastructure Services will be reviewing its quality management system; inspection services will be part of that review. Once inspection services have been considered in the context of this review, an update to the CSDR will be undertaken. Work will commence in 2018 and will likely extend into 2019.

OAG assessment:

Infrastructure Services plans to update its CSDR to guide it in terms of services most effectively delivered by internal staff versus external consultants. However, the project timeline has been extended into 2019. Infrastructure Services is currently conducting an evaluation of the organizational approach to quality management. At the conclusion of this evaluation, Infrastructure Services plans to begin the recommended CSDR update.

Table 10: Status legend

Status	Definition
Not started	No significant progress has been made. Generating informal plans is regarded as insignificant progress.
Partially complete	The City has begun implementation; however, it is not yet complete.
Complete	Action is complete, and/or structures and processes are operating as intended and implemented fully in all intended areas of the City.
No longer applicable	The recommendation is obsolete due to time lapses, new policies, etc.