City of Markham

Human Resource Information System ("HRIS") Implementation Audit

June 18, 2018

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MARKHAM

June 18, 2018

Mayor and Members of Council,

Pursuant to MNP LLP's appointment to provide Auditor General Services, I am pleased to present the Human Resource Information System ("HRIS") implementation audit report ("report") of the Auditor General for the City of Markham ("the City"). To ensure the results of our audit are balanced, we have provided in this report a summary of identified strengths as well as observations and recommendations for improvement.

The audit work was substantially completed on March 27, 2018. The report was discussed with the City's management and executive leadership team, who have reviewed the report and provided their responses within. This report is provided to you for information and approval of the City's proposed action plans.

Based on the results of our audit, the City performed reasonable procedures to implement the new HRIS system, Workforce Now, including efficient and effective internal controls and project management activities. Noted areas of strength include the planning and preparation activities, the effective project governance model, and the dedicated team responsible for all key phases of the implementation who had the appropriate knowledge and skills to ensure the final system meets the needs and expectations of the City.

Several opportunities for improvement were also identified with respect to implementing complementary user entity controls to support Workforce Now; reviewing and assessing the ADP service organization control report; and defining access roles and appropriately segregating incompatible duties.

The report will be posted on the City's website and made available to the public after tabling to Council.

Sincerely,

Geoff Rodrigues, CPA, CA, CIA, CRMA, ORMP

Auditor General, City of Markham

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EXECUTIVE SUMMARY

In support of its strategic objective of "transforming services through technology and innovation" from the 2015 to 2019 strategic plan, the City of Markham ("the City") embarked on the replacement of its human resource information system ("HRIS") called ADP's Premier Performance Pack, replacing this legacy system with ADP's Workforce Now. As both systems are supported by the same vendor, the City leveraged the assistance of ADP LLC in the conversion and migration process. The new system went live at the beginning of 2017.

As Auditor General for the City, MNP LLP ("MNP") conducted a post-implementation audit of the new HRIS to review and assess the effectiveness of the implementation controls and data migration activities focussing on the following areas:

- Business Requirements;
- Project Management;
- Change Management;
- Data Migration;
- Logical security controls; and,
- Key HRIS reports.

Based on the audit, the City followed a formal project and change management approach to implement ADP Workforce Now. As a result, many of the key controls assessed have evidence to demonstrate operating effectiveness. Noted areas of strength include:

- Planning and preparation activities for the implementation, including a Project Charter and communication plan;
- Effective project governance processes that included clear decision making and escalation procedures;
- Dedicated team of skilled individuals who were guided by defined roles and responsibilities and were accountable for ensuring the final system met the needs and expectations of the City;
- A detailed project plan, including documented project milestones, deliverables, and required resources; activities and timelines were developed and updated as the project progressed;
- Documentation of User Acceptance Test plans, scripts and test results; and,
- Documented procedures for provisioning and de-provisioning access to Workforce Now.

The audit also identified several opportunities to strengthen internal controls in the following areas:

- The Service Organization Controls ("SOC 1") audit report for outsourced service organizations is not formally reviewed by the City to assess the adequacy and effectiveness of the control activities that are managed by ADP;
- A Complementary User Entity Control ("CUEC") that was identified in the SOC 1 report has not been implemented by the City;
- Evidence was not retained to support that roles were reviewed and signed off for segregation of duties conflicts prior to the system going live; and,
- There is a segregation of duties conflict with the Library Practitioner role having access to both HR and payroll modules.

BACKGROUND

In 2016, the City decided to upgrade its human resources system. The system in place at the time was ADP's Premier Performance Pack, which was based on older technology that was beset with inefficiencies that cost the City time in duplicating data entry efforts and required paper-based processes.

A new system was selected, ADP's Workforce Now, that was expected to eliminate the inefficiencies of the legacy system and support the City's strategic objective of "transforming services through technology and innovation." Workforce Now is a full-service HRIS that includes modules such as Payroll, Benefits Management, Human Resources, Time and Attendance, and Recruitment.

A project team was subsequently established by assembling staff from the Human Resources and Finance Departments, as well as key business departments, and a dedicated project manager was hired to lead the implementation of Workforce Now. The project team worked in conjunction with the vendor (ADP), to plan, test, and implement the new system which went live in early 2017.

Pursuant to MNP's appointment to provide Auditor General Services and in accordance with the four-year audit plan, the Auditor General has conducted a post-implementation audit of the HRIS to review and assess the implementation control and data migration activities.

OBJECTIVE

The audit objective was to evaluate the effectiveness of key change management controls and related system implementation and data migration activities, using a risk-based approach. This included assessing and evaluating:

- The system implementation methodology and approach that was followed to implement the HRIS;
- Adherence to change management policy, process, and procedures;
- Key HRIS application functions and reporting perform as expected, and meet defined business requirements;
- The data migration approach that was followed;
- Testing and reconciliations completed to provide reasonable assurance that legacy data was completely and accurately uploaded into the new system;
- Key security controls implemented on the new system, including passwords, user access administration procedures, access to privileged accounts, and segregation of duties;
- Required security controls managed by the outsourced service provider (ADP); and,
- Key HRIS system generated HR reports meet business and stakeholder needs, and are reliable (i.e. complete and accurate).

SCOPE

The scope of the audit included all the Workforce Now modules that were implemented at the time the audit commenced (i.e. December 2017) and focussed on the following assessment criteria:

- Implementation methodology and approach items including the implementation plan, project charter, test plan, milestones and go-no-go criteria;
- HRIS functionality items including business requirements and gap analysis;
- Data migration items including migration plan, data sets that were migrated and field mapping;
- Testing and reconciliation items including parallel test documents, reconciliation results, issue logs and affiliated communication;

- Logical security items including vendor resources (e.g. manuals and SOC reports), role profiles / descriptions and user lists; and,
- Reporting items including the list of system reports, custom report analysis, and sample reports.

Detailed testing of the Payroll Module, including processes and controls for payments, pay calculations, and reporting, was not in scope for this audit as this will be the scope of an upcoming Auditor General audit.
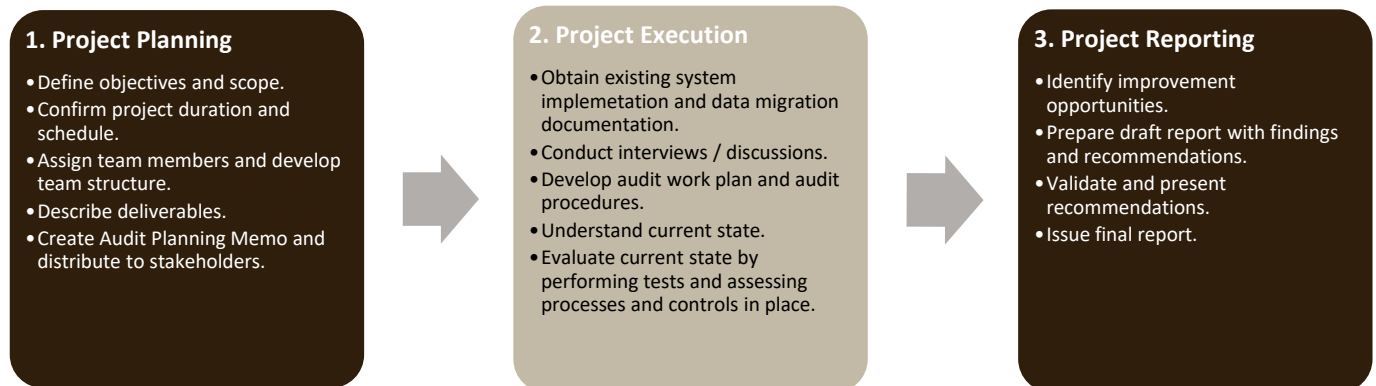
RISKS

The following inherent risks were considered during the audit, which given the scope of the audit are typical risks to be considered:

- Desired objectives may not be achieved in the absence of effective change management controls;

- Data migration risks, such as:

    o All necessary data is not accurately and completely migrated from the source application;
    o Data is not accurately mapped and loaded into the new environment; and,
    o Data is lost during migration due to technical limitations.

- The integrity of the output from the new system is impacted if other key aspects (e.g. key reports, key interfaces from/to new system, user security, segregation of duties, etc.) are not appropriately identified and considered during the system implementation exercise.

APPROACH

Based on MNP methodology, the high-level work plan for the audit included the following:

1. Project Planning
- Define objectives and scope.
- Confirm project duration and schedule.
- Assign team members and develop team structure.
- Describe deliverables.
- Create Audit Planning Memo and distribute to stakeholders.

2. Project Execution
- Obtain existing system implemetation and data migration documentation.
- Conduct interviews / discussions.
- Develop audit work plan and audit procedures.
- Understand current state.
- Evaluate current state by performing tests and assessing processes and controls in place.

3. Project Reporting
- Identify improvement opportunities.
- Prepare draft report with findings and recommendations.
- Validate and present recommendations.
- Issue final report.

AUDIT TEAM

The audit was carried out by the following MNP team:

Geoff Rodrigues, **Audit Lead Partner**	Provided expertise in audit methodology and directed the MNP team in all stages of the audit.
Trac Bo, **Quality Assurance Partner**	Provided quality assurance review over entire audit process including planning, execution and reporting.
Veronica Bila, **Project Manager**	Local contact and assisted with audit scheduling and other project management tasks.
Seyi Olowabi, **Audit Manager**	Managed the HRIS audit and reviewed audit results.
Kyra Li, **Senior Auditor**	Planned and carried out the audit procedures, involving the above resources as needed.

STRENGTHS

In conducting the audit, MNP noted several strengths with respect to how the City implemented the HRIS system. The following key strengths are described below:

Planning and Preparation Activities	The City prepared its employees for use of the new tool through various communication mechanisms and engagement initiatives. A series of training sessions were provided to employees at all levels.
Project Management	The HRIS Project was governed by committees at multiple levels, along with an effective escalation mechanism that was used as needed, and a clear decisioning process.
	The main project team and supporting committees were comprised of knowledgeable individuals who closely monitored the progress of the project.
	A detailed project plan, including project milestones, deliverables, required resources, activities, and timelines was developed and followed.
Change Management	A User Acceptance Test ("UAT") plan was developed for the HRIS implementation. The plan defined the following test requirements: • Objective; • Scope (i.e. functionality, interface and parallel testing); • Team members; • Assumptions/Risks; • Test approach; • Timing; and, • Required approvals. Test scripts were executed, and test results were documented. An issue log was maintained. The issue log demonstrated that issues noted during the implementation were logged, analyzed, and remediated.
User Access Management	The City documented procedures for provisioning and de-provisioning access within the HRIS.

SUMMARY OF OBSERVATIONS

To enable the City to set priorities in their action plans, we have reported our observations in one of three categories, "**Low**", "**Medium**" or "**High**" based on our assessment of the priority (i.e. significance, complexity, and resources required) of each observation.

Rating	Rating Description
L = Low	The observation is not critical but should be addressed in the longer term to improve internal controls or process efficiency (i.e. 6 to 12 months).
M = Medium	The observation should be addressed in the short to intermediate term to improve internal controls or process efficiency (i.e. 3 to 6 months).
H = High	The observation should be given immediate attention due to the existence of a potentially significant internal control weakness or operational improvement opportunity (i.e. 0 to 3 months).

The table below provides a summary of our observations and recommendations, based on the rating scale outlined above. Detailed observations and recommendations can be found in **Appendix A**.

REF.	SUMMARY OF OBSERVATIONS AND RECOMMENDATIONS	RATING		
		L	M	H
1	**Implementation of Complementary User Entity Controls ("CUEC")** Workforce Now was designed under the assumption that certain CUECs would be implemented by the City. It was noted that not all the CUEC[1] identified in the ADP Service Organization Control ("SOC 1") report have been implemented. As such, there is a risk that some CUECs that are required for a complete and fulsome system of controls is not sufficiently implemented and operating effectively at the City. The City should implement the CUEC relating to periodically reviewing user access.		M	
2	**Role Based Access Controls ("RBAC")** Access to HRIS is restricted to authorized users, using a RBAC methodology. The City worked with the vendor (ADP) to configure the roles matrix and assigned the roles to the City's personnel. However, we noted that documentation was not maintained to support that segregation of duties was considered, reviewed, and signed off by management. We also noted that the "Library Practitioner" role has access to both HR and payroll modules, creating a segregation of duties conflict. Mitigating controls to address the segregation of duties conflict has not been identified and implemented. The City should conduct a review to identify all roles with segregation of duty conflicts, assess the risk of each, and implement monitoring controls to address the conflict.		M	

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[1] *CUEC are controls that ADP (the service organization) assumes in the design of its service, that will be implemented by user entities (the City) to achieve specific control objectives.*

REF.	SUMMARY OF OBSERVATIONS AND RECOMMENDATIONS	RATING		
		L	M	H
3	**Review of ADP Service Organization Controls ("SOC 1") Report** The SOC 1[2] audit report for ADP is obtained by the City, however, the report is not formally reviewed by the City to assess the adequacy and effectiveness of the control activities managed by the service organization. Further, we noted that the accountability for periodic review and assessment of the ADP SOC report has not been assigned. Responsibility for reviewing and evaluating the ADP SOC report should be formally assigned to an individual with an adequate understanding of the HRIS and system of internal controls.			

RECOMMENDATIONS

The Auditor General recommends that:

1. The Human Resources Information System ("HRIS") Implementation Audit Report be received; and,

2. City staff be authorized and directed to do all things necessary to give effect to the recommendations.

ACKNOWLEDGMENTS

We would like to express our appreciation for the cooperation and efforts made by City staff whose contributions assisted in ensuring a successful engagement. City staff provided the Auditor General with unrestricted access to all activities, records, systems, and staff necessary to conduct this audit freely and objectively.

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[2] *A SOC 1 Report is a report on controls at a service organization which are relevant to user entities' internal control over financial reporting.*

APPENDIX A: DETAILED OBSERVATIONS AND RECOMMENDATIONS

#	Observation	Rating	Recommendation	Management Response
1	**Implementation of Complementary User Entity Controls ("CUEC")** Workforce Now was designed under the assumption that certain key controls would be implemented by the City, in addition to the controls maintained by the service provider (ADP). It was noted that one CUEC identified in the ADP Service Organization Control ("SOC 1") report has not been implemented. As such, there is a risk that CUECs that are required for a complete and fulsome system of controls are not sufficiently implemented and operating effectively at the City, thereby not supporting the service organizations system of controls. The City has not implemented the following CUEC that relates to the logical access of Workforce Now: • Periodic review of assigned clients' (i.e. City) employees' access to the in-scope applications for appropriateness, including assigned roles to promote segregation of duties.	**Medium**	The following CUEC should be implemented: • Periodic reviews of assigned City employee access to Workforce Now to validate that: 　• access permissions granted to users continue to be appropriate; and, 　• dormant accounts are identified and access is removed on a timely basis.	Management supports the Auditor General's recommendation. The City currently has a process in place within Human Resources to review, set up and authorize all staff related activity. For example, changes to compensation levels, approval levels and vacation entitlements. As part of the "Responsibility Matrix" being developed by the City, staff will create formal procedures and documentation, including responsibility for reviewing user roles and status to ensure that each user has been assigned to the group that fits their current role and responsibility level. The procedure will be implemented with a recommended frequency for review. The documentation will also define notification procedures that must be initiated if a breach is detected, internal or to ADP, depending on the type of incident and under whose authority the control exists. **Timeline to Implement: Q4 2018**

#	Observation	Rating	Recommendation	Management Response
2	**Role Based Access Controls ("RBAC")** A RBAC approach is implemented to restrict access to authorized users in Workforce Now. Users are assigned access rights through predefined roles that are configured in the application. The project team worked with ADP and representatives from the business lines to define the different roles and document them in profiles that identify the access rights for each role (i.e. accessible functionalities in the application for each type of role). However, we noted the following: • Evidence was not retained to support that the roles were reviewed and signed off for segregation of duties conflicts prior to the system going live; • Evidence was not retained to support that access assigned to users was reviewed and approved before going live, or after going live; and, • The Library Practitioner role (which has been assigned to two individuals) has access to edit both HR and payroll modules. Mitigating controls to address the segregation of duties conflicts have not been identified and implemented.	**Medium**	A review of all roles in Workforce Now should be performed to identify segregation of duty conflicts. Where segregation of duty conflicts exist in the roles, an assessment of the risk should be completed and documented with monitoring controls implemented that address the conflict. The Manager, Financial Reporting and Payroll should review the access rights for all current Workforce Now user profiles and sign-off to approve the access rights provisioned.	Management supports the Auditor General's recommendation. Shortly after going live, segregation of duties between Human Resources and Payroll were approved and implemented, although evidence of approval was not retained. The HRIS Executive Committee defined, approved and assigned the detailed roles and responsibilities relating to access for key personnel post-implementation. Security roles, for access and revoking access, follows a documented approval process and is part of the on-boarding and off-boarding procedures. A change approval form and workflow documents have been created, approved and implemented by the HRIS Executive Committee. A quarterly schedule was initiated in March 2018 to review special access (role based) users to ensure that users are current and that assigned roles are appropriate. This is a joint sign-off between the Security Administrator (ITS Manager) and the Manager, Financial Reporting and Payroll.

#	Observation	Rating	Recommendation	Management Response
				Formal documentation will be completed as part of the "Responsibility Matrix" development described above. **Timeline to Implement: Q4 2018** Mitigating controls to address the lack of segregation of duties in the Library Practitioner role were implemented in April 2018. **Timeline to Implement: Completed**
3	**Review of ADP Service Organization Controls ("SOC 1") Report** The Workforce Now application is hosted and managed by the vendor, ADP. The vendor issues a SOC 1 Type 2 report addressing the design and operating effectiveness of the controls managed by ADP. Although the latest SOC 1 Type 2 audit report was obtained and reviewed at a high level by the Internal Project Lead, we noted that accountability over formally reviewing the report to assess the adequacy and effectiveness of the control activities at the service organization has not been formally assigned. This is expected to be assigned in the Responsibility Matrix, however this matrix has yet to be finalized.	**Low**	Responsibility for reviewing and evaluating the ADP SOC report should be formally assigned to an individual with an adequate understanding of the HRIS and system of internal controls. The SOC 1 audit report should be reviewed to: • Assess the adequacy of the scope of the control objectives and control activities outlined in the report; • Evaluate the impact of any service organization control gaps or deficiencies noted and their impact to the City's control environment; and, • Identify compensating controls within the City's processes to address the gaps or deficiencies noted.	Management supports the Auditor General's recommendation. The City reviewed the ADP 2017 SOC report audited by Ernst and Young. The report identified two deviations that were subsequently addressed by ADP. The SOC report will be requested and reviewed annually to address the recommendations of the Auditor General. Review will be jointly undertaken by ITS and Finance Departments and appropriate action will be taken, if required. **Timeline to Implement: Q2 2019**