

ITS Strategic Roadmap – FY20 Planning

Databases

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Background

Metro Government's departments and agencies use a combination of Microsoft SQL Server versions (2008, 2012, 2014 and 2016) and Oracle versions (11g and 12c) databases to organize data within both enterprise and department-focused systems. Support for both platforms is provided by ITS through database creation, management, upgrades, backups, data security, API integrations, restores and vendor support. Microsoft Access and MySQL databases are also supported for a limited number of unique departmental applications.

ITS supports close to 1,000 production, development and test databases, serving all departments and agencies of Metro Government either directly or indirectly.

The major systems and stakeholders are:

- CityWorks/Land System – Codes department
- Assessments system – Assessor of Property
- iProcurement – Finance department
- Document Imaging – Enterprise: MNPS, Finance Department, HR Department and others
- CityWorks – Public Works department
- Nashville.gov
- Legal department
- Health department
- Human Resources department
- Social Services department
- Election Commission
- Metro Action Commission
- Metro Clerk
- Transportation Licensing
- Human Relations Commission
- General Services department
- Metro Transit Authority

Current Strategic Drivers

1. **Demand for Secure Government Systems (High)** – With massive data breaches in the news on a regular basis, expectations are growing to protect the security, availability and integrity of all applications, databases and records.



2. **Industry Direction: Cloud Computing** (High) – The widespread public acceptance of cloud services that employees and citizens use every day, along with the potential for positive financial impact and increasingly effective cloud vendor security stance make a cloud services a viable direction.
3. **Data Transparency, Access and Integration** (High) – Expectations are increasing for interfacing data systems and data collaboration between Metro departments, external agencies and even private utilities, allowing combined datasets to be easily available for public use.
4. **Technology End of Support** (Medium) – With an increased trend of vendor hosted and cloud hosted solutions, many vendors are no longer renewing support contracts for solutions hosted on-site.
5. **Move to Encryption of Sensitive Data at Rest** (Medium) – Encryption of sensitive data has become an expectation and standard practice.

On the Horizon Strategic Drivers

1. **Technology End of Support: SQL** (High) – SQL Server 2008 and 2008 R2 will reach End of Support in 2019.
2. **Technology Change: Oracle** (High) – Oracle R12 is the newest version of Oracle for iProcurement became available with Premier Support in 2018.
3. **New Database Technology** (Medium) - New cloud-based non-relational database technology such as Cosmos DB and Document DB are presenting opportunities.
4. **New SQL Server Clustering** (Low) - SQL server clustering will affect new SQL installs and current database instances.

Short Term Goals (0-6 months) 7/1/19 – 12/31/19

#	Goal/Objective	Est. Start	Est. Duration
1	Completion of Phase I for Oracle R12 (Go Live Date 5/19) post go-live (addressing bugs, patches, fixes, enhancements and refinements).	07/19	6 months
2	Rebuild Election Commission Oracle platform to 12c with enhanced security features	7/19	3 months
3	Continue implementation of CIS benchmarks on existing instances – Continue implementation of data encryption of sensitive data.	7/19	6 months
4	Research best practices on SQL for Microsoft Azure platform, document and submit to stakeholders for review.	7/19	6 months
5	MTA Next Generation Fare System – new Oracle database installs and architecture	7/19	12 months
6	Research and define data integration (API) standards, industry best practices, resources, and tools for data integration, document and submit to ELT for review.	7/19	12 months



#	Goal/Objective	Est. Start	Est. Duration
7	Define auditing and monitoring standards, research the use of SCOM, implement industry best practices, start research of new resources or tools for granular auditing and monitoring, document and submit to ELT for review.	7/19	6 months
8	Continue integrating SQL Server 2016 into our environment. Implement best practices backup and maintenance plans.	7/19	6 months
9	SQL Server 2008 – Start transitioning of SQL Server 2008 / 2008 R2 End of Support date. (July 2019)	7/19	On Going

Medium Term Goals (6-18 months) 1/1/20 – 12/31/20

#	Goal/Objective	Est. Start	Est. Duration
1	Complete implementation of CIS benchmarks on existing instances. – Continue implementation of data encryption of sensitive data.	1/20	8 months
2	Implement industry best practices, continue to define data integration standards, start procurement process (if required) of identified resources or tools	1/20	12 months
3	Complete RFP process (if required) and implement third party tools that maybe required for granular auditing and monitoring	1/20	12 months
4	Research, define and implement cloud based database administration tools, best practices, and management, submit documentation to ELT	1/20	12 months
5	Research and/or training on SQL for Microsoft Azure platform	7/20	6 months
6	Research SQL Server Always On/High Availability tools for integration into our environment, document findings and submit to ELT	7/20	6 months
7	End of Support – SQL Server 2008 – Continue transitioning of SQL Server 2008 / 2008 R2 End of Support date. (July 2019) Oracle 11g (EOL) – Rebuild Election Commission database with Oracle 12.1.0.2 Enterprise Edition	1/20	On Going

Long Term Goals (18-36 months) 1/1/21 – 6/30/22

#	Goal/Objective	Est. Start	Est. Duration
1	Plan and integrate new integration tools (if required)	1/21	18 months
2	Integrate SQL Server 2016 Always On/High Availability options	1/21	6 months
3	End of Support – SQL Server 2008 – Complete transitioning of SQL Server 2008 / 2008 R2 End of Support date. (July 2019)	1/21	On Going



Related Roadmaps

- Enterprise Data
- Business Solutions
- CRM
- Information Security Management
- Open Data
- Server
- Service Manager and IT Self Service Portal
- SharePoint/OneDrive
- Storage
- Cityworks & Land Management
- Document Management and Imaging
- Web & Mobile Apps

