Agenda – Executive Policy Committee – February 10, 2016

REPORTS

Item No. 2 Open and Accessible Data Initiative – Machine Readable Format

WINNIPEG PUBLIC SERVICE RECOMMENDATION:

1. That the inventory of new opportunities to improve data sharing, included as an attachment, be received as information.

DECISION MAKING HISTORY:

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

On December 2, 2015, the Executive Policy Committee granted an extension of time of 60 days for the Winnipeg Public Service to report back on the matter.

On September 16, 2015, the Executive Policy Committee passed the following motion:

WHEREAS on May 30, 2012, Council concurred in the recommendation of the Alternate Service Delivery Committee and adopted the following:

1. That the City of Winnipeg endorse the principles of:
   - A. Open and Accessible Data - the City of Winnipeg will share with citizens, businesses and other jurisdictions the greatest amount of data possible while respecting privacy and security concerns;
   - B. Open Standards - the City of Winnipeg will move as quickly as possible to adopt prevailing open standards for data, documents, maps, and other formats of media.

2. That in pursuit of open data the Winnipeg Public Service be directed to:
   - A. Identify immediate opportunities to distribute more of its data;
   - B. Develop a plan to index, publish and syndicate its data to the internet using prevailing open standards, interfaces and formats;
   - C. Develop a plan to digitize and distribute suitable archival data to the public;
   - D. Report back to the Alternative Service Delivery Committee in 120 days.

AND WHEREAS the Public Service has implemented initiatives to begin to address Council direction through the City of Winnipeg's open data portal;

AND WHEREAS identifying additional opportunities to provide City of Winnipeg data in a machine readable format still exist;

AND WHEREAS publishing data in a format that is machine readable format increases opportunities for citizens to access, analyze and share City data in innovative ways;

AND WHEREAS improving data sharing ensures City of Winnipeg continues to build on its commitment to openness and transparency;

THEREFORE BE IT RESOLVED the Public Service conduct a review of all city data sharing and identify opportunities to apply machine readable format along with a review of security and privacy considerations and report back within 90 days.

ADMINISTRATIVE REPORT

Title: **Open and Accessible Data Initiative – Machine Readable Format**

Critical Path: **Executive Policy Committee**

AUTHORIZATION

Author	Department Head	CFO	CAO
K. Cumming	L. Burch	n/a	D. McNeil

RECOMMENDATIONS

1. That the inventory of new opportunities to improve data sharing, included as an attachment, be received as information.

REASON FOR THE REPORT

On September 16, 2015, Executive Policy Committee passed the following motion:

"The Executive Policy Committee requested the Winnipeg Public Service to conduct a review of all city data sharing and identify opportunities to apply machine readable format along with a review of security and privacy considerations and report back within 90 days."

On December 2, 2015, the Executive Policy Committee granted an extension of time of 60 days for the Winnipeg Public Service to report back on the matter.

EXECUTIVE SUMMARY

Open Data is an important trend among all levels of government across North America, and aligns with the Mayor and Council's commitment to openness and transparency.

The City of Winnipeg's Open Data Portal was launched on July 8, 2014 with an initial inventory of 68 data sets available to the public, and open 24/7. In November 2014, the Winnipeg Public Service added datasets established to support enhanced 311 performance reporting.

Since launch, a focus has been on long-term sustainability and governance to support expansion of portal offerings based on open government best practices, balanced with respecting privacy legislation.

The Public Service has completed a study that identified a number of opportunities to apply better data sharing, along with machine-readable format, to the data that is shared with the public. 27 opportunities have been identified across all City departments as relatively low-cost, high-benefit ways to improve City data sharing as outlined in the attachment to this report.

HISTORY / DISCUSSION

Background: Open Data / Machine-Readable Data

Open Data is information that is widely available in a format that can be read by a computer, and is made available for anyone to use, transform or republish without restriction and normally only requires that the data source be cited. The practice of providing Open Data must respect all legislation and regulations regarding freedom of information and protection of privacy.

Through the course of its operations, the City of Winnipeg maintains large amounts of data, which can be divided into two categories:

- Structured data, which has a consistent data model (i.e. tables where columns and rows have defined meanings). It is typically held in databases and associated with a business application.
- Unstructured data, which is intended for human consumption, usually in documents such as Word documents, Excel spreadsheets, PDFs, web pages, or emails. The majority of data, typically 90%, is unstructured.

Machine-readable means the data can be interpreted by computer programs. Structured data (e.g., databases) is, by nature, machine-readable. Unstructured data (e.g., PDF files, MS Word documents) can be made partially machine-readable through the addition of tagging.

Data in unstructured formats is shared at a number of locations across City websites; the dominant format for this is PDF, which is used for the following reasons:

- Potential privacy and security risks such as embedded documents and malware that may attach to Word or Excel documents, are automatically avoided.
- The document will look the same for all users regardless of what system they are using and what fonts they have installed.
- The document may be viewed with an easily obtained and free software viewer that is typically installed on most computers and mobile devices.

PDFs are not designed for machine readability, limiting their usefulness in analysis of any data presented. However, if the underlying data is not structured (such as an Excel spreadsheet with inconsistently structured columns), publishing documents in other formats will still not lead to fully machine-readable data.

Generally, structured data is preferred over unstructured data, as it leads to higher quality and more reusable data, and minimizes security and privacy risks. However, structured data is more costly, as it requires a consistent business process, data modelling, a corresponding business application, and ongoing IT support. The term dataset refers to structured data in a table of rows of data all in the same format where all these rows contain information pertaining to the same subject area.

Open Data, then, is the practice of sharing datasets, in standard formats, freely and openly with the public.

Progress So Far

In 2010 and 2011, the Public Service undertook an examination of the state of data sharing at the City of Winnipeg. The focus of this initiative was on internal sharing of structured data in order to develop recommendations for an overall strategy.

On May 30, 2012, Council concurred in the recommendation of the Alternate Service Delivery Committee that the City of Winnipeg endorse the principles of Open and Accessible Data. The Public Service was directed to develop a plan to index, publish and syndicate its data to the internet using prevailing open standards, interfaces and formats. The Public Service submitted a report outlining a plan to implement Open Data and, on March 20, 2013, Council concurred with the recommendation of the Alternate Service Delivery Committee to approve this plan.

The plan contained a list of datasets that would form the initial data of the Open Data Portal, which had been identified as having met basic criteria of being already shared, structured, and accessible. The portal was launched on July 8, 2014 with an initial inventory of 68 data sets available to the public, free of charge. In November 2014, the Public Service added datasets established to support enhanced 311 performance reporting.

Two other sources of Open Data exist at the City: the Winnipeg Transit Application Programming Interface, which is specifically geared to providing data for app developers, and the Neighbourhoods of Winnipeg (NOW) portal, which gives citizens the ability to find information about Winnipeg neighbourhoods and contains the ability to download some full datasets in machine-readable format.

Winnipeg's Open Data Portal is expected to become a valuable resource for the public including:

- Offering of datasets with the most public value
- Visualization functionality that allows citizens to answer questions about City datasets
- Provision of full datasets in industry-standard formats that allow researchers, journalists, and others to perform in-depth analysis

Also, application programming Interfaces, which allow software developers to produce websites and applications, will increase the usefulness of City datasets for the public.

Since launch of Winnipeg's Open Data Portal, a focus has been on long-term sustainability and governance to support the expanded provision of portal offerings based on open government best practices, balanced with respecting privacy legislation.

Privacy and Security Concerns

Privacy and security concerns are best handled through a Council-approved Open Data Policy, which would guide the actions of City staff and assign appropriate responsibilities to the Proper Officers.

When structured datasets are shared via the Open Data Portal, privacy and security concerns are limited to the content of the datasets and whether it contravenes the criteria in the Policy. As the current Open Data Portal is hosted on the "cloud" and all data on the Portal is raw data that is considered freely accessible, no additional security risks are incurred.

When unstructured data, such as Excel Spreadsheets, are shared with the public through means other than the Portal, care must be taken by the individual to ensure that security and privacy risks are addressed for each document. This responsibility can also be covered by an Open Data Policy.

Opportunities to Improve Data Sharing

The Winnipeg Public Service has completed a study that identified a number of opportunities to apply better data sharing, along with machine-readable format, to the data that is shared with the public. 27 opportunities have been identified across all City departments as relatively low-cost, high-benefit ways to improve City data sharing. These opportunities are found in the attachment.

The opportunities identified come from existing structured, machine-readable data sources, allowing them to be published on our Open Data Portal without the need to create a new or separate machine-readable format.

Next Steps

The City's Information Systems leaders will continue to work with their respective departmental staff to identify new opportunities to offer additional datasets to continue adding value to the portal.

In 2016, the Public Service will submit an Open Data policy to Council for approval. Such a policy would allow the Public Service to steadily grow the City's Open Data presence using established criteria. The Public Service would assign the roles within the policy to existing staff to ensure a consistent approach to open data sharing. The administrator would then proceed to add new datasets, following processes established in an Administrative Standard. The process of identifying new opportunities, as above, would become an ongoing activity, with the goal of constantly improving and expanding the City's sharing of data.

In 2016, the Public Service plans to implement a performance management dashboard in the Open Data Portal. This would make use of the Open Data Portal to display performance goals against Key Performance Indicators in a dynamic and engaging way using a dashboard format. For 2017, our Open Data goal is the establishment of the Budget and Expenditures module in our Open Data Portal to allow better access to information about the City's capital projects, which was approved as a submission for funding from Council's Innovation Fund.

FINANCIAL IMPACT

Financial Impact Statement **Date:** January 28, 2016

Project Name:

Open and Accessible Data Initiative - Machine Readable Format

Comments:
This report is submitted as information only and has no financial impact.

Original signed by R. Hodges
Ramona Hodges
Manager of Finance (Campus)
Corporate Finance Department

CONSULTATION

In preparing this report there was consultation with:

- Information Systems Leaders from all departments
- City Corporate FIPPA Coordinator
- Legal Services (as to legal issues)

OURWINNIPEG POLICY ALIGNMENT

1. 01-3 – Prosperity – Provide efficient and focused civic administration and governance.
   Having a robust Open Data program supported by well understood roles allows the City to:
   a. Demonstrate accountability through service performance measurement and reporting.
   b. Make investments in technology strategically, based on sound business decisions and promoting integration and data-sharing where appropriate.
   c. Promote access to the resources and information necessary for successful operation of healthy businesses.
   d. Develop new and innovative means for city government to communicate with businesses in the Winnipeg region and the rest of the world.

SUBMITTED BY

Department: Corporate Support Services
Division: Data & Application Services
Prepared by: K. Cumming
Date: January 28, 2016

ATTACHMENT

OPPORTUNITIES TO IMPROVE DATA SHARING AND APPLY MACHINE-READABLE FORMAT

The Winnipeg Public Service has completed a study that identified a number of opportunities to apply better data sharing, along with machine-readable format, to the data that is shared with the public. 27 opportunities have been identified across all City departments as relatively low-cost, high-benefit ways to improve City data sharing.

Department	Dataset
Fire and Paramedic Services	• Active Incidents • Patient Offloads • Fever / Flu / Serious Respiratory Illness Incidents (dashboard)
Community Services	• Bylaw Investigations Initiated • Recreation Registrations
Public Works	• Park Asset Inventory • Street Network • Parks • Lane Closures • Tree Inventory • Traffic Counts
Water & Waste	• Water Quality Test Results • Waste Pickup Statistics • Garbage, Recycling, and Yard Waste Collection Schedule • Current Water Main Activities • River Levels
Parking Authority	• Citations (Parking Tickets)
Corporate Support Services	• 311 Service Requests • 311 Real-Time Metrics (dashboard)
Corporate Finance	• Residential Property Assessment Parcels • Compensation Disclosure
Winnipeg Police Service	• Crime Reports (CrimeStat data) • Stolen Vehicle E-Watch
Planning, Property & Development	• Building Permits • Historical Buildings • Variance / Conditional Use Notices • Address Points