Subject: Open Data Update 2022

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Report to Information Technology Sub-Committee on 31 May 2021

Submitted on May 19, 2022 by Natalie Kahalé, Director, Service Transformation, Innovative Client Services

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Ward: Citywide

Objet : Mise à jour des données ouvertes 2022

Dossier : ACS2022-ICS-ST-0001

Rapport au Sous-comité de la technologie de l'information

le 31 mai 2022

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Quartier : À l'échelle de la ville

REPORT RECOMMENDATION(S)

That Information Technology Sub-Committee receive this report for information.

RECOMMANDATION(S) DU RAPPORT

Que le Sous-comité de la technologie de l'information prenne connaissance de ce rapport pour information.

BACKGROUND

Open Data is a philosophy and practice requiring that certain data is made freely available to the public, in machine readable format without restrictions from copyright, patents or other mechanisms of control. The Open Data program was formally launched at the City of Ottawa on May 12, 2010, with Council's approval of the **Open Data Report** (ACS2010-COS-ITS-0005). As part of the report, Council adopted the Open Government principles and declared the City of Ottawa data to be "open".

The vision for the Open Data Program during this Term of Council is:

To better engage and empower the Ottawa community in utilizing City data assets through the establishment of community relationships and supporting open analytics capabilities.

To deliver this vision, the City is focusing on the following three areas over this Term of Council:

1) **Expand & Optimize Open Data Offerings:** The City will identify additional datasets suitable for open data, prioritize and publish additional datasets as open data, and optimize current open data offerings based on public demand to fuel digital solutions.

2) **Grow & Support the Open Data Community:** The City will find opportunities to promote open data and open analytics across Ottawa, identify community needs, and foster partnerships that will enable digital innovation.

3) **Implement an Open Analytics Platform:** The City will implement an Open Analytics platform that provides Ottawa residents with the ability to perform analytics on City data assets to support innovation and citywide problem solving.

This plan and associated actions will help Ottawa residents to access, leverage and better use City data assets and to work in conjunction with the City towards solving problems and enhancing quality of life. Effective open data and analytics offerings and related community engagement will empower residents to participate in citywide innovation, develop data-driven solutions, conduct data science, and develop solutions that work alongside City service delivery.

DISCUSSION

Open Data 2022 Highlights

Over the course of the past five months, the Open Data team, within Service Transformation, has continued to work with City departments to release valuable City data to the public that is aligned with public demand and the strategic priorities of Council. As of May 1, 2022, the City released 30 datasets in 2022, bringing the total number of datasets released this term of Council to 150 (see Open Datasets Released 2019-2022).

The team continues to foster strategic partnerships with the open data community (academia, civic tech groups, non-profit organizations, residents, businesses, and other levels of government) and leverages digital public outreach tools to better understand the data needs of the community. The team continues to pursue innovative solutions and to provide the public with additional ways interact with City data such as dashboards, interactive maps, and data stories. The following highlights the 2022 open data initiatives organized by the three focus areas of the Open Data Program for this Term of Council:

Expand & Optimize Open Data Offerings

Population & Household Estimates by Ward

The city-derived population and household estimates by ward are based on the 2001 postcensal estimate of population and net new units from issued building permits, changes in rental vacancy and the decline of persons per unit in existing households. The Open Data team worked with the Planning, Real Estate & Economic Development department to release the Population & Household Estimates by Ward – Mid 2021 data on Open Ottawa on January 15, 2022.

COVID-19 and Vaccination Rollout

The Open Data team continues to work closely with Ottawa Public Health (OPH) to support the datasets related to the Daily COVID-19 Dashboard and COVID-19 Vaccination Dashboard. As of May 1, 2022, Ottawa Public Health has released 18 datasets associated with the pandemic and the vaccination rollout. In total, these datasets have been downloaded over 1.8 million times.

Influenza and Outbreak Reporting

In addition to the COVID-19 and vaccination datasets, Ottawa Public Health has released the data associated with the Ottawa Public Health Respiratory and Enteric

Surveillance Report Dashboard, which provides a overview of the current Influenza season in the City of Ottawa. The Outbreak Reports in Ottawa Healthcare Institutions status dashboard is posted weekly and summarizes all currently active outbreaks in institutional settings (including hospitals, long-term care homes and retirement homes) and outbreaks that have been declared over since the last posting.

Municipal Address Point and Road Centreline Enhancements

The Municipal Address Point dataset provides the location of addresses for buildings and structures within the City of Ottawa. There are over 300,000 address points in the City. The Addressing By-law 2014-78 provides the regulatory framework for municipal addressing in the City of Ottawa. The By-law and associated administrative documents set out street naming, civic number and signage requirements and criteria for both public streets and private roads.

The Road Centrelines dataset provides the location of road centrelines segments for road and streets in the City of Ottawa and associated attributes such as address range, and road classifications. There are over 26,000 records in this dataset.

Both of these datasets are used by many mapping tools and mobile applications within the City of Ottawa as well as third-party developed solutions such as the Open Street Map. In June of 2022, data enhancements are planned to both datasets to improve the overall usability and quality of the datasets. The open data community will be kept up to date on these dataset changes through updates on the Open Ottawa – Engage Ottawa News Feed and within the dataset metadata.

Grow & Support the Open Data Community

Predicting Watermain Breaks

As part of the partnership with Carleton University, the Water Services branch of the Infrastructure & Water Services department worked with a team of masters level students on a data challenge to predict when and where watermain breaks will occur. Watermains refer to the pipes that distribute water throughout the city. When a watermain break occurs, there is potential for a significant loss of water and associated service interruptions, which have financial and environmental ramifications and prevents the City from delivering safe drinking water to the residents of Ottawa.

This partnership and research were focused on identifying the factors that contribute to watermain breaks, in order to understand where the City of Ottawa should conduct condition assessments. Their analysis demonstrated that there was a significant relationship between watermain breaks and the time of day. Additional research is

needed to identify contributing factors to this relationship. The students presented their findings at Carleton University's annual Data Day and finished second overall on their presentation, with specific recognition on the approach and data science techniques the students used as part of this term project.

Data Visualization Challenge

As part of a multidisciplinary masters level design course at the University of Ottawa, groups of students from the faculties of Engineering and Arts worked to develop a digital artistic data visualization based on one of the 17 United Nations (UN) Sustainable Development Goals.

To help the students, the Open Data team partnered with the Ottawa Neighbourhood Study and provided an Open Data 101 presentation to the students on the basic concepts related to open data, data storytelling and data visualization. The students presented their data visualizations at the University of Ottawa's annual Design Day that is hosted by the Centre for Entrepreneurship and Engineering Design. The Open Data team and the Ottawa Neighbourhood Study Program Manager acted as judges for the Open Category of the event. The student projects included paintings, children's books, comic books, interactive maps and dashboards using data to tell the story of the UN sustainable development goals.

Public Data Challenges

In 2010 and 2013, the Open Data Program hosted two successful Apps4Ottawa contests, which resulted in the growth in the number of datasets available through the open data catalogue, building relationships within the open data community and the development of many mobile applications and data visualizations using City data.

Given the recent success of the data challenges with the students at both Carleton University and the University of Ottawa, the Open Data Program would like to extend these data challenges to the general public to participate in the future.

Similar to the Apps4Ottawa contests, the goal would be to leverage City data to develop data visualizations, data storytelling, and/or data science solutions that are aligned with the strategic priorities of the City. These challenges would help educate the general public on City services and programs, and promote the use of City data and increase data literacy within the community. These activities would help to build and strengthen the relationships within the community and encourage City departments and partners to release additional datasets that are aligned with City priorities in serving the community. The City of Ottawa would be looking again for industry partners to co-host the data

challenges, provide data literacy training for the public and provide prizes. Planning work related to the challenges would take place in 2022 with the launch of these challenges taking place in the next Term of Council.

Data Day: Careers in Data Science Panel

Jointly hosted by the Faculty of Science and the Carleton University Institute for Data Science (CUIDS), Data Day is an annual conference that celebrates the latest developments in data science and analytic research. Data Day includes presentations by Carleton researchers and industry experts, a keynote address, panel discussions and networking opportunities as well as a poster competition to showcase graduate student research in data science across all disciplines.

The Social Policy, Research & Analytics Manager within Community and Social Services department and one of the Open Data Leads from Service Transformation represented the City of Ottawa on the Careers in Data Science Panel, with other panelists from Shopify, IBM and Mindbridge to share experiences and give the attendees insights into a career in the data science field.

Virtual Data Club

In support of increasing data literacy internally within the City and to build a community of practice for staff interested in data, a virtual Data Club was launched in 2021. The Data Club continues to meet on a monthly basis to discuss topics such as business intelligence, data governance, open data, data strategies, analytics, data collection techniques, and data visualization in a municipal context to share best practices, lessons learned and promote further innovation. All City staff are welcome to participate and contribute to building a data community at the City. Staff do not need to have a technical background to attend Data Club meetings.

This year the club featured speakers from the Social Policy, Research & Analytics team within the Community & Social Services department (CSSD), Information Technology Services team within the Innovative Client Services department (ICSD), York Region's Data, Analytics & Visualization Services team and Service Transformation within ICSD. Data Club sessions continue to be popular, with an average of 60-70 staff attending each session.

The Data Club has received presentations on the following topics this year to date:

- January: Temporary Emergency Accommodation Dashboard
- February: Self-Serve Analytics: Data Refinery

- March: York Region: Putting Data to Work
- April: Self-Serve Analytics: Auto Artificial Intelligence & Machine Learning 101
- May: Environics Analytics: Leveraging external data sources to inform City planning and services

All City staff are welcome to participate and contribute to building a data community at the City. Staff do not need to have a technical background to attend Data Club meetings.

Equity & Inclusion Lens

The Women and Gender Equity Strategy was developed to ensure the City of Ottawa's services, strategies, and plans integrate a women and gender lens and promote women and gender equity. The City recognizes the importance of gender-sensitive data, and has embarked on several initiatives to re-examine our data systems and processes using a gender equity lens.

As part of the 2022 workplan, the Open Data team are working with the Gender and Race Equity, Inclusion, Indigenous Relations and Social Development team within the Community & Social Services department (CSSD) to assess the current open data practices and policies using a gender equity lens. In addition, the Data Club and the internal women.net affinity group will be hosting a joint event in June of 2022 to help promote the Women and Gender Equity Strategy to City staff to further understand the priorities, strategic actions and goals, as well as the role data has played in the development and execution of the strategy.

Implement an Open Analytics Platform

Point-in-Time (PiT) Count Dashboard

On April 29, 2022, the Community and Social Services department released the Point-in-Time (PiT) Dashboard. A PiT count is a one-day snapshot of homelessness in the community. City staff and community partners work together to survey people experiencing homelessness in Ottawa. So far, the City has led two counts in April 2018 and October 2021. The survey is conducted to gather information about people experiencing homelessness. The goal of this work is to guide new approaches to address homelessness at a local level and help in the planning and delivery of services. In conjunction with the release of this dashboard, the Open Data team worked with Community and Social Services staff to release all PiT count survey results data on Open Ottawa as open data.

Municipal Finance and Socio-Economic Dashboard

The City of Ottawa was selected by Statistics Canada for an exploratory project on municipal-level financial data using the Canadian Government Finance Statistics (CGFS) as a reference model for city-level comparisons. The Municipal Finance and Socio-Economic Dashboard is a partnership with the Federation of Canadian Municipalities. The dashboard contains City profiles, which include data for revenue and expenses, assets and liabilities, demographic data including population growth, age, distribution, police reported incidents, crime severity index, new housing price index, consumer price index, and labour force characteristics.

The financial information included in the dashboard was acquired through published financial statements from 2018 and adjusted to align with the international standards adopted by the agency. The soft launch of the dashboard was on March 25, 2022 and included data from 16 municipalities across Canada. Statistics Canada is working towards including all Canadian municipalities in the dashboard over time.

Voice Enabled Services

Municipalities look at additional ways to engage and share information with residents. Voice enabled services such as voice assistants, chatbots, and text agents are a new way to also provide residents with information about City programs and services. The Open Data team is currently investigating a proof of concept to test voice enabled services that are powered by open data.

Conclusion

Open Data is most valuable when the data is reused, shared, and integrated into information products that support decision-making processes. For the remainder of the Term of Council, the Open Data team will continue to evolve the Open Ottawa platform and provide residents and businesses with more tools to consume City data so that residents may gain greater insight into City services and programs. The focus of the Open Data Program will continue to be on releasing data that help solve civic issues and provide the highest level of public benefit. The Program aims to look beyond the download and develop information products such as public dashboards, interactive maps and data stories to increase the consumption and use of City data. The team is focused on continuing to build partnerships within the open data community to better understand the community need and co-create innovation solutions together.

Service Transformation will develop an engagement approach with the open data community for the program plan for the next Term of Council. The engagement

approach will involve a series of in-person, online consultations, and surveys to solicit feedback from a broad range of internal and external stakeholders to ensure the plan is aligned with the strategic goals of the City, public demand and the City's commitment to Open Government. The engagement approach will embrace inclusivity to remove barriers and encourage participation in the development of the plan from a wider range of stakeholders.

FINANCIAL IMPLICATIONS

There are no financial implications associated with this report.

LEGAL IMPLICATIONS

There are no legal impediments to receiving the information in this report.

COMMENTS BY THE WARD COUNCILLOR(S)

This is a Citywide report.

ADVISORY COMMITTEE(S) COMMENTS

No advisory committee comments were collected for the purposes of this report.

CONSULTATION

The Open Data Program 2019-2022 was developed based on community feedback received from stakeholders including academia, civic tech groups, non-profit organizations, residents, businesses, and other levels of government. The online community engagement tool Engage Ottawa was launched in April 2019 to capture feedback from the community. The website remains active to encourage open discussion and suggestions around datasets the public would like the City to post and ways to leverage existing datasets for community benefit.

ACCESSIBILITY IMPACTS

Applicable accessibility standards will be adhered to during the implementation of initiatives identified with the Open Data Program 2019-2022.

INDIGENOUS GENDER AND EQUITY IMPLICATIONS

As noted earlier, as part of the 2022 workplan, the Open Data team will be working with the Gender and Race Equity, Inclusion, Indigenous Relations and Social Development team to assess the current open data practices and policies. In addition, the internal Data Club and women.net affinity group will be hosting a joint event in June of 2022 to

help promote the Women and Gender Equity Strategy to City staff to further understand the priorities, strategic actions and goals, as well as the role data has played in the development and execution of the strategy. The Open Data team, along with the City, recognizes the importance of gender-sensitive data, and has embarked on several initiatives to re-examine our data systems and processes using a gender equity lens.

In addition, the Open Data team will work with the Anti-Racism Secretariat to ensure the City collects and uses race-based data and applies an anti-racism lens when developing City policies and procedures.

RISK MANAGEMENT IMPLICATIONS

There are no risk management implications associated with this report.

RURAL IMPLICATIONS

There are no rural implications associated with this report.

TECHNOLOGY IMPLICATIONS

All technology implications are being executed within existing budgets and in conjunction with Information Technology Services under the Smart City governance structure.

TERM OF COUNCIL PRIORITIES

This report and the supporting documentation falls under the 2019-2022 Term of Council Priority, Service Excellence through Innovation. The Open Data program is an initiative of the Smart City 2.0 Strategy within the Innovative Government pillar.

SUPPORTING DOCUMENTATION

Open Datasets Released 2019-2022

DISPOSITION

Service Transformation will continue to closely monitor and report progress on the status of the Open Data Program to the Information Technology Sub-Committee.