

Open Data Master Plan - Update Report

Date: April 3, 2017

To: Executive Committee

From: Deputy City Manager & Chief Financial Officer and Chief Information Officer

Wards: All

SUMMARY

As directed by City Council at its meeting on December 13, 2016, this report provides an update on the development of the Open Data Master Plan. It summarizes work undertaken to date and outlines next steps, timelines and deliverables.

Development of the Open Data Master Plan supports the City's commitment to Open Government which is to improve the delivery of services, make information more accessible and support initiatives that build public trust in government. The blueprint for developing the Open Data Master Plan will embrace the four guiding principles of Open Government: transparency, participation, accountability and accessibility.

To date, the Open Data team has:

- Engaged internal and external stakeholders.
- Conducted preliminary research including: jurisdictional best practices, current Open Data development capacity, and current City technology capabilities.
- Identified Open Data opportunities and challenges.
- Created a blueprint for the development of an Open Data Master Plan.

There are three proposed phases for the development of the Open Data Master Plan.

- Phase One: Assessment and Planning: January – April 2017
- Phase Two: Co-Development of Draft Master Plan: May – August 2017
- Phase Three: Present and Implement Master Plan: Fall 2017

The Open Data Master Plan will be guided by four key principles that will inform the action items and deliverables. These four principles are:

- Master Plan will be co-developed with the public;
- Master Plan will focus on releasing data sets that help solve civic issues and provide highest public benefit;
- Master Plan will explore opportunities to improve City efficiency; and
- Master Plan will embrace inclusivity to remove barriers to open data and strengthen resilience.

RECOMMENDATIONS

The Deputy City Manager and Chief Financial Officer and Chief Information Officer recommend that:

1. City Council direct the Deputy City Manager and Chief Financial Officer and Chief Information Officer to report to the October 24, 2017 Executive Committee with a proposed Open Data Master Plan.

FINANCIAL IMPACT

There is no financial impact associated with this report.

DECISION HISTORY

At its December 13, 2016 meeting, City Council directed the Deputy City Manager and Chief Financial Officer and Chief Information Officer to report back to the April Executive Committee with a progress report on the Open Data Strategic Plan.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.EX20.19>

At its February 5, 2016 meeting, Government Management Committee requested the City Clerk and the Chief Information Officer to report back on Open Data in the City.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.GM10.4>

At its May 24, 2016 meeting, Executive Committee adopted motions for the City Manager, in consultation with the Chief Information Officer, City Clerk and City Solicitor to develop an Open Data Strategic Plan.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.EX15.25>

COMMENTS

Development of the Open Data Master Plan supports the City's commitment to Open Government which is to improve the delivery of services, make information more accessible and support initiatives that build public trust in government. The blueprint for developing the Open Data Master Plan will embrace the four guiding principles of Open Government: transparency, participation, accountability and accessibility.

Open Data is a foundational element that will help drive innovation and new opportunities for both the delivery of City services and the communities that municipal governments serve. Open Data and the Open Data Master Plan will also be aligned to the initiatives of the Civic Innovation Office and Office of the Chief Transformation Officer.

Blueprint for the Open Data Master Plan

As directed by City Council, I&T is creating an Open Data Master Plan for the City of Toronto. This is a complex, multi-pronged project that will intersect with all city Divisions, corporate strategic initiatives, community groups, private business, academia and the general public.

The Open Data Committee endorsed the proposed approach of co-development of an Open Data Master Plan as part of the Open Data work plan for 2017.

There are three proposed phases for the development of the Open Data Master Plan.

Phase One: Assessment and Planning: January – April 2017

- Issue identification
- Creating partnerships
- Hiring resources
- Modernizing the current Open Data workflow and pipeline

Phase Two: Co-Development of Draft Master Plan: May – August 2017

- Define mission and vision
- Identify challenges and evaluate approaches to solve these challenges
- Co-design and consult with community stakeholders
- Draft Master Plan roadmap
- Propose timelines and deliverables
- Socialize draft plan with internal stakeholders and City executives

Phase Three: Present and Implement Open Data Master Plan: Fall 2017

- Present learnings from iterative co-development of Master Plan
- Present Open Data Master Plan and work plan roadmap
- Prepare report for Committee and Council

Principles for Open Data Master Plan

The Open Data Master Plan will be guided by four key principles that will inform the action items and deliverables. These four principles are:

1. Master Plan to be co-developed with the public.
 - Co-development of the master plan to be a shared activity that the community and City (Divisions and Agencies) perform together, as partners.
 - All documentation to be developed and reside in the public realm.
 - Tool development should be open source and establish the City as a sponsor of open source development.
 - Knowledge sharing to be bi-directional.
2. Master Plan will focus on releasing data sets that help solve civic issues and provide the highest public benefit.
 - Focus on data that can identify, prevent, and solve civic problems.

- Work with the public to identify, prioritize, and strategize approaches to solutions.
- Foster approaches that enable systems change and transformation.
- Solutions to be built in a manner that best suits reuse by other jurisdictions and is scalable; from local to national levels.

3. Master Plan will explore opportunities to improve City efficiency.

- Break down internal organizational silos by building an information sharing culture that enables collaborative use of data.
- Foster development of enhanced data-driven decision making tools and the use of predictive analytics.

4. Master Plan will embrace inclusivity to remove barriers to open data and strengthen resilience.

- Design beyond current needs and future states.
- Reach across digital barriers and include diverse perspectives and needs, especially those from the margins.
- Enable and enrich services that have been traditionally slow to see the benefits of data analysis and technology.

High Level Concept for the Plan

The Open Data Master Plan will include:

- Vision and mission statements
- Goals
- Approaches to overcome current challenges
- Mechanism for governance and stakeholder involvement going forward
- Learning Roadmap - internal capacity building plan
- Data Visualization Platform adoption and utilization
- Implementation targets and timelines
- Key performance measures
- Evaluation frameworks and reporting

Outcomes of Open Data Master Plan

The Open Data Master Plan will increase interdivisional cooperation, strengthen community relationships and innovate the public service.

Ongoing collaboration with the community throughout the co-development of the Master Plan, and in implementing the Master Plan roadmap, will advance adoption of new approaches, tools and technologies. This shared learning and collaborative approach to addressing civic issues will catalyze already existing programs to make them more efficient and effective. The Master Plan will also align and drive progress towards large corporate initiatives such as Smart Cities.

The Open Data Master Plan should be modular in design so that foundational elements, like learning roadmaps and civic challenge solving approaches, can be scaled and reused in divisional strategies and work plans.

Work to Date

Current data sets and standing

With over 236 data sets published representing 1060 data files, the City's Open Data program has maintained a respected place among Canadian municipalities. In a recent 2016 ranking of Canadian Municipalities on Open data, The Canadian Open Cities Index (<https://publicsectordigest.com/2016-open-cities-index-top-20-results>) noted that "the City of Toronto continues to be a national leader in the publication of diverse and high-quality data sets" and ranked high (second overall) in Open Data implementation.

Released new data sets

Since January 2017, the Open Data team has assisted the release of 6 new data sets and 25 new data files, including:

- Real-time bluetooth transportation data on City highways and select corridors
- Real-time and archived festival and events
- Outdoor artificial ice rinks
- Long Term Financial Plan public consultation survey results
- Toronto Fire Services incident data
- Demographics for the 140 neighbourhoods that make up the City of Toronto

Not included in these numbers are the numerous refreshes and updates done to existing data sets and data files that take place on an ongoing basis.

Blueprint for the Open Data Master Plan

In addition to releasing new data sets, since January 2017, the Open Data team has been working to design the blueprint for the Open Data Master Plan. This work has included; conducting a review of current Open Data development capacity, assessing current City technology capabilities, participating in internal and external committees, conducting research and engaging with community and industry experts.

Identify opportunities and challenges

- Performed scan of relevant technologies used internally and externally to produce and consume Open Data.
- Reviewed corporate strategic initiatives (e.g. Smart Cities, Vision Zero, at-risk youth, Strong Neighbourhoods, workforce modernization and e-City) and identified Open Data requirements and how to best align the Master Plan to these corporate initiatives.

Assessed Internal Open Data workflow and pipeline

- Identified opportunities for digitalization, modernization and automation within current business practices.

Participated in Internal Committees and work groups

- Data Governance Committee, Information Management Liaisons, I&T Customer Relationship Management team.
- Created and strengthen internal partnerships.
- Identified new data sets that can be released.
- Identified operational challenges that the Open Data team could help facilitate.
- Identified data stewards within Divisions that can identify, prioritize and assist with releasing new data sets.

Conducted Preliminary Jurisdictional Scan

Part of the development of the Open Data Master Plan involves identifying best practices from other jurisdictions. A preliminary review of best practices has identified the benefits in participatory co-development, transparency, and accountability in the creation of the Master Plan. Further to this, successful jurisdictions are taking a systems and service design approach to problem discovery and service re-engineering. Finally, through the scan it became apparent that there are two distinct ways to approach an Open Data Master Plan: one that is focussed on increasing data inventory and release; or one that identifies specific civic issues and creates a plan for releasing the necessary data sets and civic partnership methods to solve these specific problems.

Our approach, as outlined in the guiding principles, is the development of an Open Data Master Plan that prioritizes solving civic issues and releasing data sets that provide the highest public benefit.

Strengthened Intergovernmental Relations

- Continue to build strong relationships and shared learnings with other cities, the Province of Ontario, and Federal Government.
- Toronto participates in a quarterly national Open Data cities teleconference series (Open Data G4) and quarterly provincial meeting series (Public Service Open Data community of practice).

Community Engagement and Sponsorship

- Weekly and monthly community events focusing on Open Data and civic technology.
- Civic Tech Toronto: Participated in project discussions, identified where Open Data could be leveraged, where current Open Data offerings could be further improved, identified new releases, identified new skills and tools, and connected CivicTech projects to teams within the City.
- Open Data Day: Co-developed an Open Data Best Practices document with public stakeholders and the Government of Ontario.
- CodeAcross 2017: Sponsored Civic Tech Toronto hackathon on civic tech challenges presented by the Government of Ontario and the City of Toronto.
- Open Data Book Club: Participated in community organized data exploration group.
- Collaborated with secondary and post-secondary institutions.

- Participated in research with the Canadian Open Data Exchange through their Cross Canada tour that seeks to help municipalities and provinces align their Open Data strategies to provide increased benefits to companies. Research includes details on how companies use our data, identifying their main revenue sources, determining the data sets of highest value, and the challenges to they face to becoming more competitive.

Next Steps

The development of an Open Data Master Plan in 2017 will focus key priority actions to improve and drive the effectiveness of Open Data for the City of Toronto. The plan will be developed through a collaborative process and will consider best practices, standards, key goals, objectives, challenges, and approaches where the City and the public can work together to define and address civic challenges.

The Open Data team will engage with key stakeholders and leading Open Data strategists, like Open North (non-profit and steward of the International Open Data Charter) and Civic Tech Toronto, to develop our approaches to public consultation and co-development of the Open Data Master Plan.

Increased partnership with academia (for example, OCAD Inclusive Design Research Centre) will be an essential element to the development of the Master Plan to ensure the plan's design reaches beyond current needs and digital barriers.

The Master Plan will also ensure the engagement of Divisions and Agencies and support for ongoing Open Data monitoring, management and engagement. Divisions and Agencies will be key stakeholders in the co-development of the Master Plan where their insights, approaches to solving challenges, and opportunities for community partnerships can be fully explored.

Incremental improvements will be directed through the Open Data Committee and addressed in the Open Data work plan to ensure the Master Plan is holistic and in alignment with City strategic actions and priorities.

As an exploratory step into collaboration and co-development with the civic tech community, the City will be hosting Civic Tech Toronto Hack-nights at Metro Hall weekly for the month of June. The outcome will be strengthened relationships between government and community stakeholders, and learnings from co-development with civic tech community on civic problem co-defining and solution building.

City Divisions as well as the public benefit when their data is published to the City's Open Data site. An Open Data Visualization Portal launch is expected by the end of 2017 through partnership with ESRI Canada. The outcome will be enhanced ability for Divisions to access data made available by other Divisions, increased collaboration, and increased information sharing with the public. Further investigation on how to best utilize an Open Data Visualization Portal for internal and public benefit will take place as part of the development of the Open Data Master Plan.

The Open Data team will continue to focus on strengthening the Open Data program and developing our approach to public consultation and co-development of the Open Data Master Plan. The Open Data Master Plan and a work plan road map will be presented to the Executive Committee for approval in the fall of 2017.

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ATTACHMENTS

Appendix 1 - Motions approved at the February 5, 2016 Government Management Committee GM104 and May 24, 2016 Executive Committee EX 15.25

ATTACHMENT 1

Motions approved at the February 5, 2016 Government Management Committee GM10.4 and May 24, 2016 Executive Committee EX15.25.

MOTION	PROGRESS
<p>GM10.4 The Government Management Committee requested the City Clerk and the Chief Information Officer to:</p> <p>Motion 1: Report to the Government Management Committee regarding the possible incorporation of the following (points a-t) into the City of Toronto Open Data Policy:</p>	
<p>a. Include adopting and enforcing the OPEN BY DEFAULT standard similar to the Province of Ontario.</p>	<p>Complete: March 2017 - City of Toronto Open Data Policy now includes an OPEN BY DEFAULT standard for all City data.</p>
<p>b. Set specific targets and deadlines within a 4-Year Plan.</p>	<p>Ongoing (current): Open Data Master Plan expected at the October 2017 Executive Committee.</p>
<p>c. Require Data Quality – not just Quantity counts.</p>	<p>Complete: Data quality is reviewed as part of each Open Data release. The Corporate Data Governance Framework addresses data quality standards for the corporation.</p>
<p>d. Continue to identify and promote a staff member as the Open Data Champion.</p>	<p>Complete: The City Clerk is the chair of the Open Government Committee. The Open Data Policy identifies the City Clerk and the Chief Information Officer as the corporate leads for Open Data. The Open Data Committee comprises divisional representation who are ambassadors of the Open Data initiative.</p>
<p>e. Make Open Data deliverables part of all RFPs for Software and Services.</p>	<p>Ongoing (current): Currently the Project Review and gating process for all IT projects screen for Open Data capacity at the design stage.</p>
<p>f. Make Open Data deliverables part of all the Management Performance Reviews, implemented through the City Manager and/or Executive Director, Human</p>	<p>Complete: Specific program delivery tasks and deliverables are included in Management Performance Reviews. The Management Control Checklist</p>

MOTION	PROGRESS
Resources, as part of the Management Control Checklist.	already requires all management staff to strengthen efforts to make information open and accessible through reviewing what data will be made available as Open Data.
g. Provide progress updates every 6-months to the Government Management Committee.	Ongoing (current): The Open Data Master Plan, once developed, will address reporting requirements to the appropriate committees.
h. Assess the City's Open Data maturity level using the Open Data Institute's Pathway tool.	Ongoing (current): The Open Data Committee will consider in the Open Data Master Plan development and 2017 work plan.
i. Build a proper Open Data portal by implementing user friendly technologies like CKAN/DKAN or Socrata.	Ongoing (current): Implementing data visualization portal summer 2017. Further investigation an open source portal to be addressed in Open Data Master Plan.
j. Include the name and contact information for the maintainer of each dataset.	Ongoing (current): At this time, the relevant divisional web pages, with contact information for the program that generated the dataset is being included. Additional contact information at the dataset level and engagement mechanisms will be considered in the Open Data Master Plan.
k. Publish datasets using common standards which are in use in other jurisdictions.	Ongoing (1-2 years): The City of Toronto currently has adopted a common standard in which to publish Open Data sets. The Open Data Master Plan will consider common standards used in other jurisdictions as well. Data set standards are also being reviewed and developed as part of I&T Division's Data Governance Framework.
l. Negotiate the right to publish any original data collected or created by third parties.	Ongoing (1-2 years): The Open Data Committee will work with Purchasing and Materials Management Division to

MOTION	PROGRESS
	explore the possibility of including this as part of the RFP process.
m. Review all IT systems and identify any which cannot currently output Open Data, and either fix it or replace it with one that can.	Ongoing (future state): The I&T Division is currently undertaking an assessment that will identify IT systems that cannot output Open Data and will consider this in the development of the Open Data Master Plan. Open Data requirements are assessed as part of ongoing legacy system replacements.
n. Datasets should always be posted as Open Data before they are used to enable City built apps or websites.	Ongoing (1-2 years): The City is creating an inventory of web applications that have data that could be released as Open Data, and will prioritize for release as part of the Open Data Master Plan.
o. Make community outreach and event participation part of the job description for staff involved with Open Data and open government.	Complete: All job descriptions for staff involved in Open Data and Open Government have key responsibilities, such as effective communication, event planning and facilitation and community outreach.
p. Allocate funds to enable and support community Open Data and civic tech initiatives.	Ongoing (current): The City continues to sponsor civic tech initiatives like CodeAcross 2017 and will host events like Civic Tech Toronto's weekly hacknights. The Open Data Master Plan will also consider the various opportunities for civic engagement and budgeting requirements for civic initiatives.
q. A dedicated Civic Tech Advocate.	Ongoing (current): The City continually engages with the Civic Tech community and is committed to further fostering the relationship through initiatives like the Civic Innovation Office.
r. Create an advisory board for Open Data.	Ongoing (1-2 years): The Open Data Committee has identified this as a key

MOTION	PROGRESS
	priority and will define within the Open Data Master Plan.
s. Implement a mechanism to allow access to historical data for any Open Datasets currently provided only as snapshots.	Ongoing (1-2 years): The Open Data Committee is exploring platform tools that will address access to historical data provided as snapshots. Currently, in accordance with the permanence principle, all data published remain archived online for trending purposes, unless there is a clear justification for doing otherwise.
t. Release as many of the large number of datasets in demand as possible, as they would be valuable additions to the Open Data portal.	Ongoing (current): The Open Data Committee sets targets for publishing datasets on an annual basis. The focus on releasing high-value datasets that are in demand by the community is a priority in the work plan. A key principle of the Open Data Master Plan will be releasing data sets that have the highest capacity to solve civic issues and provide the greatest public benefit.
GM10.4 Motion 2 as below	
2. Hold a community consultation and information meeting on the Open Data in the City Policy and opportunities for public engagement and participation.	Ongoing (current): The Open Data Committee continues to explore public consultation opportunities for public engagement and participation in the development of the City's Open Data Policy and initiative. This will be targeted in 2017.
EX15.25 Motion 1: Requested the City Manager, in consultation with the Chief Information Officer, the City Clerk and the City Solicitor to develop an Open Data Strategic Plan, such plan to:	
a. adopt the Open By Default Standard for all City and Agency data;	Complete: March 2017 - City of Toronto Open Data Policy now includes an OPEN BY DEFAULT standard for all City data.

MOTION	PROGRESS
<p>b. address the Open Data challenges and opportunities identified in Items GM10.4 (Open Data in the City) (http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016).</p> <p>CD10.8 (Toronto Fire Services Open Data) http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.</p> <p>CD10.9 (Toronto Paramedic Services Open Data) http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.</p> <p>including issues of staffing, City Policies, costs and privacy; and</p>	<p>Complete: CD10.8 released in February 2017</p> <p>Ongoing (current): CD10.9 and GM10.4 work ongoing to release - expected later in 2017</p>
<p>c. include timelines for implementation and regular progress reports every six (6) months.</p>	<p>Ongoing (1-2 years): The Open Data Master Plan, once developed, will address implementation and reporting requirements.</p>
<p>EX15.25 Motion 2: Requested the City Manager, in the development of the Open Data Strategic Plan:</p>	
<p>a. review the Digital City/Open Data programs of major global cities for the purposes of developing benchmarks to accelerate the City of Toronto's implementation steps over the next 4 years.</p>	<p>Ongoing (1-2 years): To be addressed in the development of the Open Data Master Plan.</p>
<p>b. give consideration to the establishment of a mechanism for continuing enforcement and implementation of the Open Data Strategic Plan.</p>	<p>Ongoing (1-2 years): To be addressed in the development of the Open Data Master Plan.</p>
<p>c. explore consolidating the Chief Information Officer and City Clerks Open Data responsibilities into one role to be administered through the office of the City Manager with the possibility of creating a Chief Data Officer (CDO) role.</p>	<p>Ongoing (1-2 years): Suggestion to be addressed in the development of the Open Data Master Plan.</p>
<p>EX15.25 Motion 3 as below</p>	
<p>3. Requested the City Manager to submit a progress report on the above to the</p>	<p>Complete: Report was brought to the December 2016 meeting.</p>

MOTION	PROGRESS
Executive Committee at its meeting on October 26, 2016.	