



City of Cambridge

Executive Department

YI-AN HUANG
City Manager

Data Publication Standard

City staff: are you publishing a data set, visualization, dashboard, report, or other data product? Then these guidelines are for you! Reach out to the Open Data Program at OpenData@CambridgeMA.gov to talk through your questions and projects any time.

Background

When Cambridge's City Council passed the Open Data Ordinance in September of 2015, it instructed the City to view data as a tool for achieving greater transparency, efficiency, and innovation, while instructing staff to seek balance between making data available and protecting privacy. Though the Open Data Program has grown in scope and scale since then, these values remain its guiding principles.

Data Publication Standard Objective:

This Data Publication Standard will serve as a guide in identifying and producing high-quality data products and services and help set clear expectations throughout the Open Data ecosystem in Cambridge. These guidelines will help City staff design and offer timely, accessible, usable, and understandable data services both within and outside the Open Data department. Throughout this document, those designing and providing data and analysis services and products will be referred to as “data providers.”

1. Publish with a purpose

When choosing which data and analytics projects to work on, priority should be given to those projects that advance the goals of the City and the community. Clarity around why some data projects are prioritized ahead of others also strengthens public trust.

Data workers should:

- ❖ Understand how data projects contribute to city and community goals
- ❖ Understand how data projects align with departmental or project mission



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statements

- ❖ Publicly document the purpose of each data service or project
- ❖ Prioritize or seek out, when possible, data projects that align with the City Council goals, which can be found at

<https://www.cambridgema.gov/departments/citycouncil>. The Council goals are as follows:

- **Housing and Zoning:** Address the housing crisis by making it easier to build more housing of all types with a focus on affordability and protections for low, middle-income, elderly, and disabled residents.
- **Economic Opportunity and Equity:** Ensure the City of Cambridge offers economic opportunities to all residents and businesses and is taking steps toward greater economic equity, especially among our marginalized communities.
- **Transportation:** Improve the safety, efficiency, access, and sustainability of transportation options for all, and advocate for key transit priorities with the MBTA and other state and regional partners.
- **Sustainability and Climate Resilience:** Deepen the City of Cambridge's commitment to addressing the climate crisis through the use of sustainable energy and strengthening climate resilience and supporting our residents and businesses through this transition.
- **Government and Council Performance:** The City Council is committed to effective decision making through close collaboration with each other and the City administration, to communicate transparently and to deepen accountability and engagement with the community.
- The City Council intends to work closely with the City Manager and staff to streamline priorities, establish metrics to track performance, and allocate staffing and financial resources.

2. Understand users and their needs

Cambridge has a unique mix of data and analytics consumers. Like most cities, it has citizens, businesses, and City staff – but it is also home to some of the world foremost academic and biotech institutions, which means that the users of our data services are often researchers as well.

Data workers should:



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- ❖ Put user needs at the center of data product development. This can affect granularity of the data, the update frequency, and the format the data will be in.
- ❖ Different users will have different levels of technical skill and different challenges; all users have equal right to the data. With this in mind, developers should seek to understand where users' pain points will be and remedy them.

3. Include democracy as a user need

Data and analytics services and products must stay politically neutral, or users' trust will be undermined.

Data workers should:

- ❖ Ensure that the City administration (City Manager and City Council, Mayor) are aware of City data and analytics services and products and know how to use them for both background knowledge and policymaking.
- ❖ Present data neutrally and objectively; we provide the data and others can use them for building arguments, opinion, and commentary.
- ❖ Choose projects based on City and community goals

4. Provide a unified experience across analytics and data services

Users should be able to easily see what data sets were used to make each data product. When users understand what data were used to develop visualizations and other analysis, it helps build comprehension and trust.

Data workers should:

- ❖ Provide links back to the data product underlying each analytics or visualization product; raw data should always be accessible from any analyzed form of that data.
- ❖ Seeing which analytics products have already been built from certain data sets can inspire users to construct their own queries and take the initiative further.
- ❖ Analytics and visualization products should be built on top of our own data service, using the same APIs or other export options that our users would access.



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5. Make services simple and easy to use

Data and analytics products and services should be straightforward and easy to navigate. Products and services should be designed with usability as a priority.

Data workers should:

- ❖ Ensure that the metadata of every product is clear and organized.
- ❖ The metadata should be in plain language (acronyms should be spelled out; jargon should be defined).
- ❖ If there is a data dictionary, provide clear links to it and explain what it is.

6. Make information accessible by everyone

Government services strive to work for everyone; our data services should do the same.

Data workers should:

- ❖ Learn about and use accessibility features (such as maximizing colors for colorblind users)
- ❖ The Open Data Program will provide trainings to teach people how to access and use public data and analytics tools and products.
- ❖ Design products and services such that users of different levels of technical knowledge and familiarity can comfortably use them.
- ❖ Provide avenues for user feedback and be open to changing the user experience when needed.

7. Choose the right tools and technology

The right tools can help us maximize the benefit to our users. The Open Data team can always help data workers explore and discover what tools will maximize their ability to deliver the best data products.

Data workers should:



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- ❖ Automation can save us time and let us focus on more projects as long as we can do it in a reliable and consistent way; consider setting up an automated process to update data sets rather than manually updating.
- ❖ Be thoughtful about choosing tools and technology when planning a data product; reach out to the Open Data team with questions.

8. Inspire creative use of data in the local data community

Cambridge's local data community is unique in that it includes citizens, businesses, and City staff as well as some of the country's foremost academics, researchers, and developers.

Data workers should:

- ❖ Keep in mind that open data can inspire and empower both new users and experts to use data to make decisions, answer questions, and formulate new avenues of research.
- ❖ Maintain public engagement as a top priority.
- ❖ Work with the communications office to publicize engagement efforts.
- ❖ The Open Data Program will conduct public workshops and classes, both in person and virtually.
- ❖ The Open Data Program will publish newsletters regularly; let the team know if you'd like your data product featured in the newsletter.

9. Be transparent and accountable

When data is transparent and easy to use, it builds trust in the users. Every data or analytics product should transparently communicate the source of its data.

Data workers should:

- ❖ Enable users to access raw data in easily downloadable or otherwise accessible formats.
- ❖ Ensure that data product developers are reachable by the public; email addresses or feedback forms should be prominently displayed wherever possible.



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- ❖ If the data is aggregated or grouped in some way, provide a clear explanation as to why and how that aggregation was performed.
- ❖ If outliers in the data were left out, or any other data was changed or omitted, state that information clearly.
- ❖ The Open Data team will maintain and update a data inventory.

10. Iterate and improve frequently

Data services are never static: data flows in and out constantly. We must constantly improve our services as well.

Data workers should:

- ❖ Solicit, consider, and explore public feedback.
- ❖ Monitor for obsolete or deprecated data, and follow data retirement guidelines.
- ❖ The Open Data team will consult with the City Data Analysts Group frequently regarding necessary updates