

| City of Boulder: data analytics service standards

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Revising Author: Enterprise Data Team
(Innovation and Technology
Department)

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1. Purpose and context

The purpose of this document is to document standards for the request and delivery of data analytics services.

The City of Boulder has established this data service standard designed to ensure high-quality data and analytics services across all city departments. This standard

serves as a guiding framework to promote quality, continuous improvement, transparency, accuracy, and user-centric design in our data initiatives.

2. Motivation

The development and enhancement of data and analytics services is a core priority for the [city's Innovation and Technology department](#) (the “Department” or “we”). The Department is committed to growing and enhancing these services through delivery and outreach.

3. Scope

The scope of this standard is the Enterprise Data Team, charged with the delivery of data and analytic services citywide, and all city staff who discharge the services described below as part of their duties (the “Program”).

Specifically excluded from the scope of this document are data requests pertaining to Open Records. For more information, see the city's [Central Records](#) resources.

4. Core data and analytic services

The following are defined as core Program services:

Service	Description	Primary audience
Data strategy consultations	Advice	Internal city staff
Data analysis	Data analysis to inform enhanced operational or policy decision-making.	Internal city staff
Mapping and GIS analysis	Geospatial data analysis or presentation (physical or virtual).	Internal city staff
Quantitative evaluation	Design or implementation of robust quantitative evaluation techniques as envisaged by the city evaluation guidelines.	Internal city staff
Qualitative evaluation	Design or implementation of robust qualitative evaluation techniques as envisaged by the city guidelines on qualitative research.	Internal city staff

Open data requests	Publication of additional datasets, or troubleshooting and amendments to existing open data sets.	Public
Database access	Access to city-maintained databases.	Internal city staff
Data engineering	Extraction, transformation, landing of data available to the city.	Internal city staff
Data governance support	Consultation around appropriate use, storage, handling, sharing of city data.	Internal city staff

For requests for services outside of the primary audience, or for other data requests not captured by the above, see the resources below.

5. City values and commitment to equity

Data projects in the city seek to embody the city’s [values](#), including *Customer Service* enshrined in a commitment to centering user needs. All data projects in support of these goals should be delivered in an ethical manner.

Of particular importance is our shared [commitment to advancing racial equity](#). Projects that advance this commitment will be prioritized. All data projects will be subject to the use of the city’s Racial Equity Instrument. In accordance with the city’s [guidance on the collection and use of demographic data](#), analysis should always be disaggregated by race where feasible and aligned to these standards.

6. Service design principles

The Department conceptualizes the Program as a holistic service, and we seek to apply service design principles to every aspect of these service. We commit to using user-centered approaches, end-to-end experience, and iterative improvement; specific applications of this commitment are documented below.

We seek to ensure that data services are not just functional but also aligned with user needs, creating a cohesive experience for city staff and members of the public who rely on them.

7. Core methodologies

The core methodology for data projects delivered by the city is [CRISP-DM](#). The city encourages informal adoption of the process to meet emerging needs, while engaging with all six phases of the methodology.

8. Data governance

The appropriate use, storage, handling of city data underpin all data projects. All data projects, will comply with the City Data Policy and related guidance. All projects will engage the relevant data steward (or their documented guidance) and the city's commitment to sharing data where possible.

9. Data quality

To maintain data integrity, we have rigorous quality checks at various stages of data management, including validation, cleaning, and review processes. User acceptance testing is required for all production projects. Our aim is to provide reliable, accurate, and timely information to users and the public.

10. Accessibility and usability

Wherever possible, data and visualizations should be provided in user-friendly formats, with accessible metadata and clear guidelines for interpretation. We prioritize open data formats to facilitate broad accessibility, allowing residents, businesses, and researchers to interact with and utilize the data effectively.

- **Open Data Formats.** We use open and widely accepted formats (e.g., CSV, JSON, and GeoJSON) to ensure compatibility across platforms and user applications. This aligns with the Open Data Institute's Data Standards, promoting ease of use and integration.
- **Web Content Accessibility Guidelines (WCAG).** Over time, all digital data interfaces will comply with the [Web Content Accessibility Guidelines \(WCAG\) 2.1](#), ensuring that datasets, dashboards, and data visualizations are accessible to users with disabilities.
- **Metadata Standards.** All published datasets should be accompanied by clear, standardized metadata following the ISO 19115: Geographic Information Metadata or Dublin Core Metadata Initiative (DCMI) guidelines, ensuring users can easily interpret data sources, methods, and limitations.
- **Data Visualizations and Interpretations.** We aim to follow the best-practices outlined by the [Data Visualization Society](#) to create intuitive and interpretable visualizations. Each visualization includes context, legends, and tooltips, ensuring clarity and transparency in data presentation.

- **Equitable Digital Access.** We aim to align with the Digital Equity Act's Guidelines to ensure all community members, regardless of technological proficiency or access, have opportunities to engage with our data resources.

11. Evaluating success and continuous improvement

The Department is committed to evaluating the success of projects and the wider program. Success will be evaluated in three ways:

- 1) **Sponsor evaluations.** Annually, representatives of the Innovation & Technology Steering Committee ("ITSC") will be interviewed for feedback on program performance.
- 2) **Project stakeholder surveys.** All project stakeholders will be polled at the conclusion of a project to evaluate success against project criteria and to evaluate opportunities for improvement.
- 3) **Performance measurement.** As committed-to through the Budgeting for Resilience and Equity program, a number of performance measures will be collected and reported on.

The Department is committed to using this information to drive continuous improvement in the program delivery and structure. This standard will be reviewed annually to alignment with evolving best practices in the data and analytics field.

12. Target fulfillment times

Queries related to open data should be addressed and closed within thirty days. Fulfillment times for other project types are not standardized.

13. Requesting support

Internal city staff seeking services or consultation should submit a request through [ServiceDepot](#).

Members of the public seeking services or consultation should submit a request through [InquireBoulder](#).