

CITY OF CAMBRIDGE

OPEN DATA WORKSHOP

DECEMBER 10, 2025

Who are we?

Alix Epstein

- Systems Data Analyst
- College librarian
- Public health background
- Running, trivia, crossword puzzles

Reinhard Engels

- Data Analysis & Open Data Program Manager
- Also an ex-librarian!
- Bioinformatics visualization at the Broad Institute
- Library Technology at Harvard and Cambridge Public Library

What is data?

- **Information in the form of facts and numbers, which can often be used to analyze something or make decisions**



What is open data?

- The idea that some data should be free and accessible to everyone, to use however they want, without restrictions




The Cambridge Open Data Program

- **A set of systems, technologies, and policies for maximizing the value of Cambridge's data by sharing it, enabling city staff and the public to use it in various ways, making sure businesses have access to it free of cost, and removing barriers between city departments in data sharing**
- **Fostering transparency, encouraging community engagement, stimulating innovation – while prioritizing privacy and data security**







The Data Portal




data.cambridgema.gov

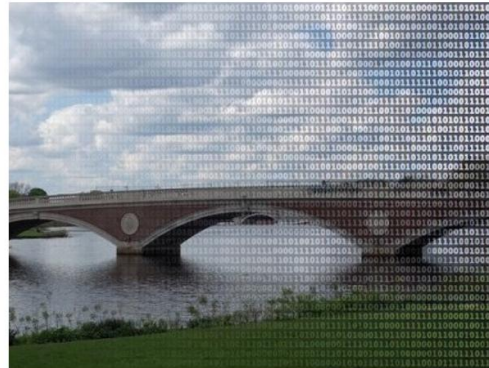


City of Cambridge

[Quick Links](#) [Subscribe](#) [Translate](#) 

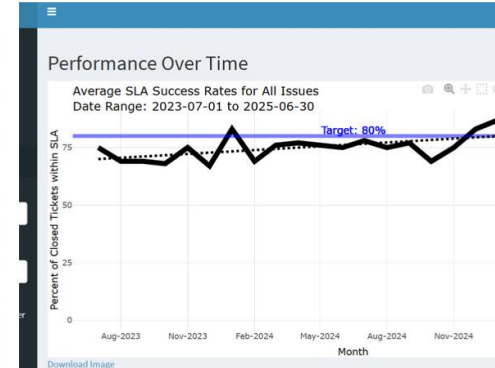


[Services](#) [I Want To](#) [Departments](#) 



Open Data Portal

Explore hundreds of free datasets from across the City.



Cambridge 311 Performance Dashboard...

It's the same tool our teams rely on every day to measure and improve how the City responds to SeeClickFix (311) service requests, and now we're giving you access ...



Cambridge Open Data Virtual Workshop...

Free, Hands-on course on Cambridge Open Data via zoom. All are welcome!



Gallery



Geographic Information Systems



Get Involved



Guides & Tutorials



Newsletter



Open Budget



Policy & Planning



Standards & Guidelines

City of Cambridge Open Data Portal

Search

Search

405 Results

Sort by Recently Added

Budget - Salaries- FY 2025 Budget/Finance

Tags No tags assigned

API Docs

Created June 11, 2024

Views 15

Outstanding Employee Awards General Government

Every spring, the Cambridge City Manager seeks nominations for the Outstanding City Employee Award (OEA). The OEA program recognizes City employees for their extraordinary contributions to public service, above and beyond job

More

Tags No tags assigned

API Docs

Created June 10, 2024

Views 6

Certificates of Occupancy Inspectional Services

Records for certificates of occupancy issued by the inspectional services department

Created May 31, 2024

Filters

View Types

Categories

☐ Assessing

☐ Budget/Finance

☐ General Government

☐ Geographic Information (GIS)

☐ Inspectional Services

Tags

Choose tag

Use the search box or the categories or tags to look for a data set

What kinds of data are on the Open Data Portal? What formats?

"Data Asset"

- **Term for each individual result or item listed when you browse or search the portal**
- **Types of Data Asset:**
 - **Dataset**
 - **Chart**
 - **Files & Documents**
 - **Maps**
 - **Filtered Views**

What kinds of data are on the Open Data Portal? What subjects?

Category

- City department producing or collecting the data
- There can be only one for each data asset
- Examples: Public Safety, Public Works, Traffic & Parking
- Exceptions: there are currently a couple of non-department categories for historical reasons

Tag

- Grab bag subject marker that can cut across departments or pinpoint something very specific within a department
- Each data asset can have multiple tags
- Examples: bicycles, permits, hvac

Metadata – data about the data

- Description
- Date last updated
- Date created
- Update frequency
- Category
- Tags
- License
- Number of rows
- Number of columns
- Rows
- Columns
- Source of data
- Limitations

City of Cambridge Open Data Portal

Search

Building Permits: Addition/AlterationPublicEdit

Building Permits: Addition/Alteration

Inspectional Services

List of permits related to the construction or the alteration of existing buildings in Cambridge. These permits cover construction that changes the structure, the footprint, or the volume of the building. This includes decks, porches, and additions, as well any reconstruction, renovation or repair to an existing structure. This dataset derives from...

[Read more](#)

Last Updated
June 9, 2024

Data Provided By
City of Cambridge Inspectional Services Department

Featured Content Using this Data

Choose to promote up to 3 assets that use this data, or choose to feature any relevant external resources. If left blank this section will be invisible.

Manage Featured Content

About this Dataset

Updated
June 9, 2024

Data Last Updated
June 9, 2024

Metadata Last Updated
March 4, 2024

Date Created
October 30, 2018

Views
6,172

Downloads
1,131

Data Provided by
City of Cambridge Inspectional Services Department

Dataset
Owner
Steven Espinoza

Civic Innovation

Problem Statements Related to this Data

What can the permits' application dates reveal about patterns of economic activity in the city?

Maintenance Plan

Estimated Update Frequency

Weekly

Specific Limitations

Limitations

Only completed applications are listed in this dataset.

Topics

Category

Inspectional Services

Tags

construction, alteration, housing and development, permits

Licensing and Attribution

License

Open Data Commons Public Domain Dedication and License

Source Link

<https://www.cambridgema.gov/inspection.aspx>

What's in this Dataset?

Rows
10.6K

Columns
86

Each row is a
Permit

Columns (86)

Column Name	Description	API Field Name	Data Type
# Record Number		id	Number

CITY OF CAMBRIDGE

AE

Looking at the data

Each row is an item (in this case, a permit)
Each column is an attribute of that item

Building Permits: Addition/Alteration

itbuildi...	Number of Stories...	Building ...	Gross Square Foot...	Building Use	Owner-O...	Condo As...	Building Construction Type	Off-Stree...	Proposed...
	6	25	155355	Commercial / Mixed Use		False	Steel/Concrete, Non-Combustibl		
	3	45	50550	Commercial / Mixed Use		False	Steel/Concrete, Non-Combustibl		
	4	60	125200	Commercial / Mixed Use		False	Steel/Concrete, Non-Combustibl		
	6	62	25844	Commercial / Mixed Use		False	Steel/Concrete, Non-Combustibl		
	2	0	0	Commercial / Mixed Use		False	Masonry / Wood (Type III)		
	3	50	10000	Commercial / Mixed Use		False	Steel/Concrete, Non-Combustibl		

Creating a visualization

Data Selection

^

≡↕

Dimension ?

Select Column... ▾

✎

Measure ?

☰

▒

📊

📈

📉

📊

⋯

🌐

📅

Filters ▾

Select data or a chart type to get started

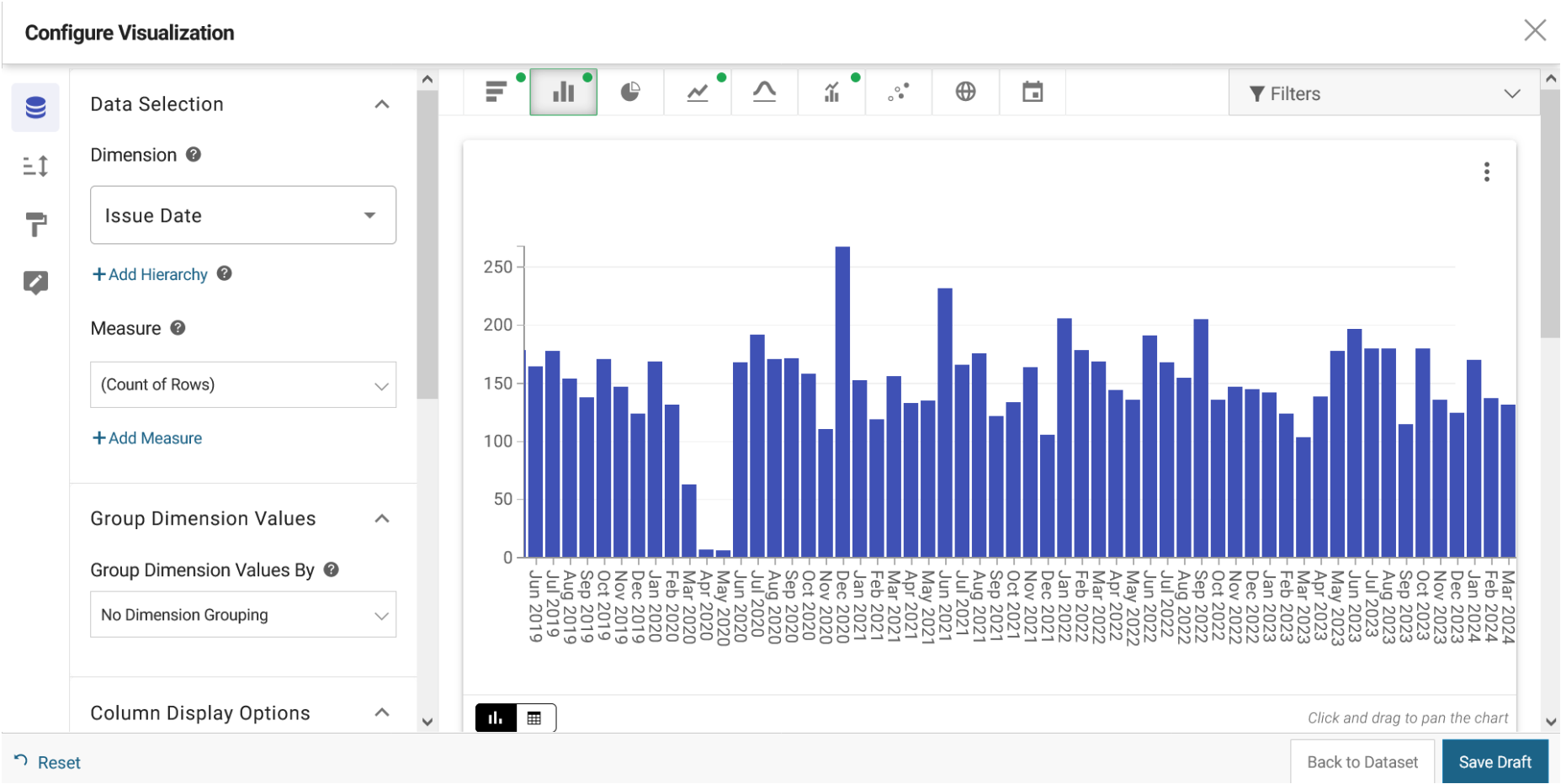
There are two ways to get started. Select a chart type to see recommended dimensions and measures or select a dimension or measure to see recommended chart types.

↶ Reset

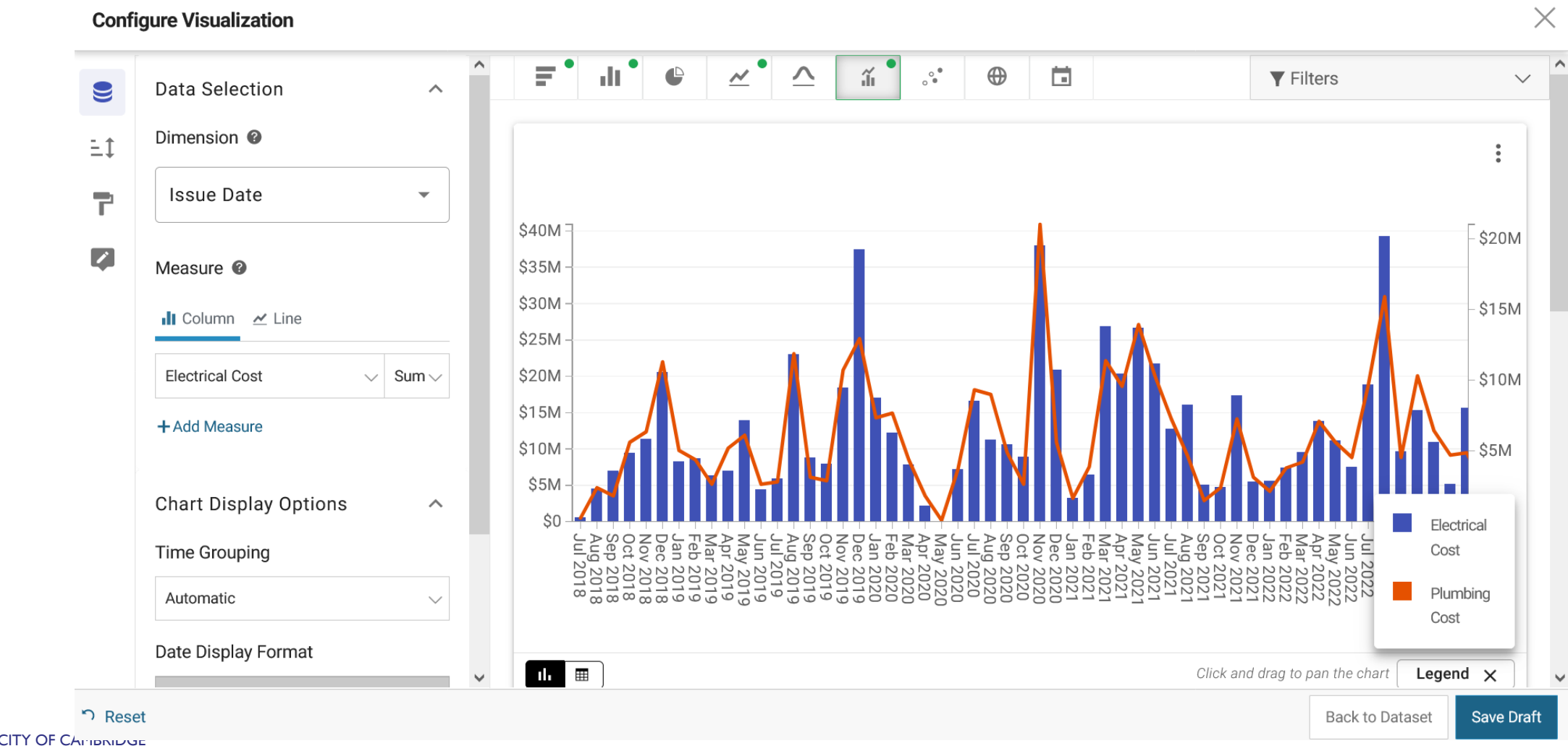
Back to Dataset

Save Draft

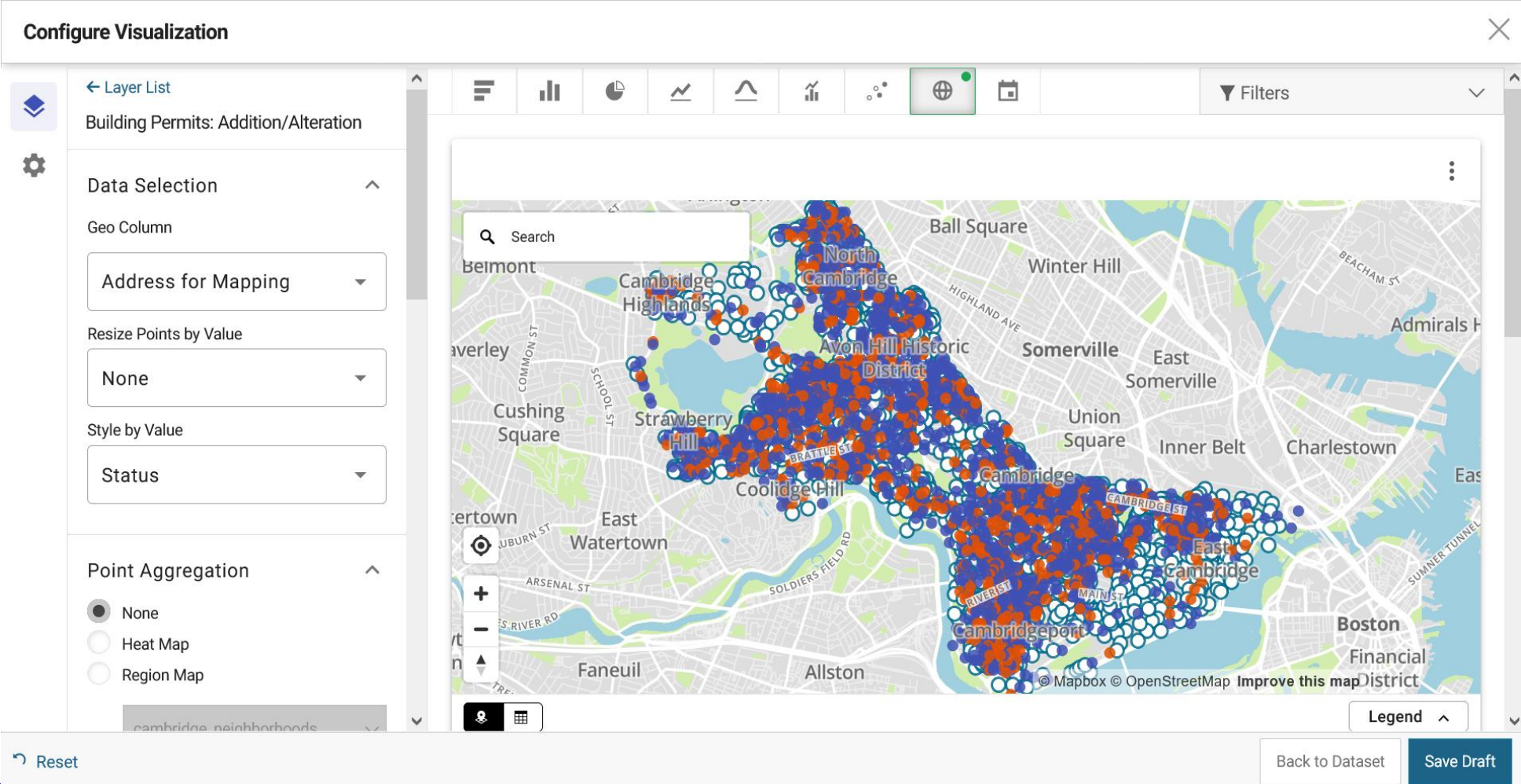
Bar chart



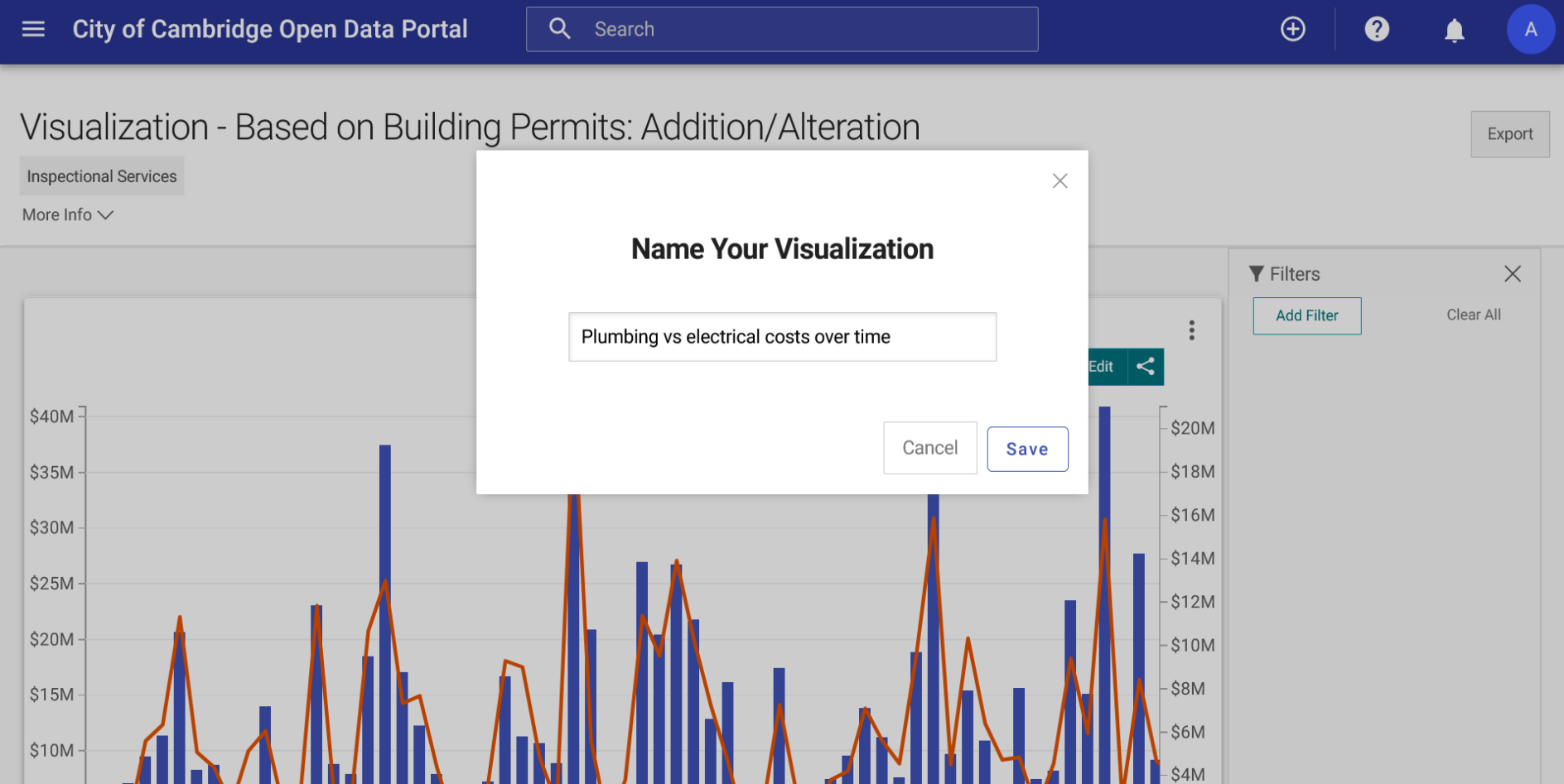
Combination chart



Map



Saving a visualization



Publish for private use or publicly

City of Cambridge Open Data Portal

Search

+

?

🔔

A

Plumbing vs electrical co

Save

Publish...

⋮

Plumbing vs electr

Inspectional Services

More Info

Private

🔒

Only individual collaborators and certain site roles can access

Public

🌐

The public can view

Cancel

Publish

Filters

Add Filter

Clear All

\$40M

\$35M

\$30M

\$25M

\$20M

\$15M

\$18M

\$16M

\$14M

\$12M

\$10M

\$8M

Querying (filtering) the data

Building Permits: Addition/Alteration

Public

Save As

Edit

Back to Overview

Switch to Grid View

Search

Export

#	Build...	#	Elect...	#	Plum...	#	Gas ...	#	HVA...	#	T...	#	Final...	#	Fire ...	T	Desc...	T	Size ...	✓	Chan...	✓	Chan...
	buildi...		elect...		plum...		gas...		hvac...		t...		final...		fire_p...		detail...		size...		floor...		exter...
	\$3,119,225		\$1,063,837		\$197,130		\$0		\$973,730		\$5,700,292				\$346,370		Interior renov...		0		False		False
	\$170,000		\$36,000		\$35,000		\$5,000		\$35,000		\$296,000				\$15,000		Frame new i...		0		False		True
	\$28,000		\$0		\$0		\$0		\$0		\$28,000				\$0		Repair front ...		0		False		False
	\$26,100		\$0		\$0		\$0		\$0		\$26,100				\$0		Demoing offi...		0		False		False
	\$13,770		\$0		\$0		\$0		\$0		\$13,770				\$0		WEATHERIZ...		0		False		False

< 1 of 107 >

Showing rows 1-100 of 10628

Filters | Clear all

Total Cost

is greater than or equal to

5000

X

+ AND

Apply

Exporting Data: use Cambridge data with other tools

The screenshot displays the City of Cambridge Open Data Portal interface. The main header includes the portal name, a search bar, and user navigation icons. The 'Crime Reports' dataset is selected, showing tabs for 'About', 'Data', and 'Related Content'. An 'Export' button is highlighted in the top right corner. A modal window titled 'Export dataset' is open, providing options for downloading the data. The modal includes a 'Download file' button (highlighted with a red arrow), an 'API endpoint' button, an 'Export format' dropdown set to 'CSV', and a radio button selected for 'All data (95923 rows)'. A red arrow also points from the 'Export' button to the modal. The background shows details about the dataset, including a 'Maintenance Plan' section.

City of Cambridge Open Data Portal

Crime Reports

Public

Export

Export dataset

Crime Reports

Download file API endpoint

Export format
CSV

☒ All data (95923 rows)

Cancel Download

Updated
June 15, 2024

Maintenance Plan

Estimated Update Frequency Annually

Maintenance Plan Details Data Updated Annually upon publication of our annual crime report.

oData: live connections for excel, Tableau, PowerBI)

Dogs of Cambridge

General Government

This dataset displays the name, breed, and approximate location of dogs in Cambridge. It is based on dog license data collected by Cambridge's Animal Commission. All locations listed in this dataset have been obscured to protect privacy. Please see the limitations section below for more information.

Last Updated
April 14, 2025

Data Provided By
City of Cambridge Animal Commission


Featured Content Using this Data

Dogs of Cambridge Data Story

Public

November 3, 2023

26.7K Views




Based on the Dogs of Cambridge open dataset, which displays the name, breed, and approximate location of dogs in Cambridge.

Top Dog Names in Cambridge

Public

April 14, 2025

1,276 Views



The top dog names in Cambridge. This visualization is based on the Dogs of Cambridge dataset, which displays the name,

About this Dataset

Updated
April 14, 2025

Data Last Updated
April 14, 2025

Metadata Last Updated
September 23, 2024

Date Created

Civic Innovation

Problem Statements Related to this Data
Where should new dog parks be located?

Maintenance Plan
Estimated Update Frequency
Annually

City of Cambridge

Developers

Help

Search

Sign In

Actions

Export

Query data
Group, aggregate and more

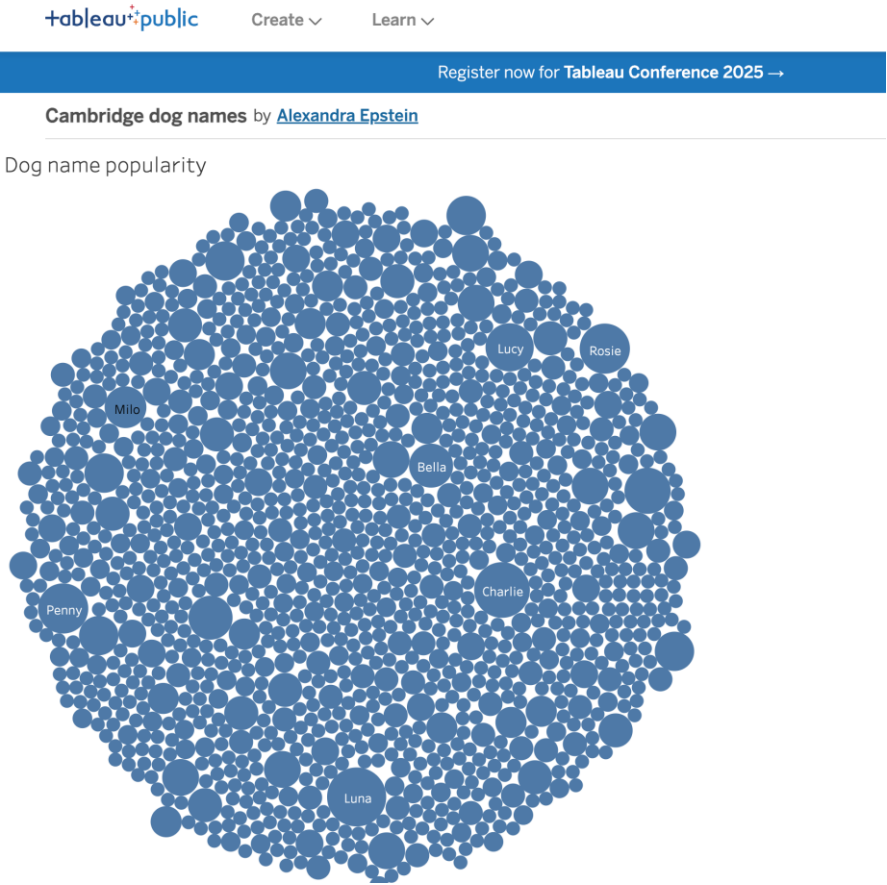
Visualize

API

Access via oData

Share and Embed

Contact dataset owner



APIs: use Cambridge data programmatically

Export dataset

Crime Reports

Download file

API endpoint

Data format

JSON

☒ All data (95923 rows)

⚠

Default API limit exceeded

Our API has a default limit of providing 1,000 rows. [Learn more](#) about how you can modify the default limit.

API endpoint

https://data.cambridgema.gov/resource/xuad-73uj.j

API documentation

Developer portal

Cancel

Copy to clipboard

JSON		Raw Data	Headers
Save		Copy	Collapse All
		Expand All (slow)	Filter JSON
▼ 0:		file_number:	"2024-04574"
		date_of_report:	"2024-05-31T22:04:00.000"
		crime_date_time:	"05/31/2024 22:00 - 22:03"
		crime:	"Aggravated Assault"
		reporting_area:	"1102"
		neighborhood:	"North Cambridge"
		location:	"0 CAMERON AVE, Cambridge, MA"
▼ 1:		file_number:	"2024-04572"
		date_of_report:	"2024-05-31T22:02:00.000"
		crime_date_time:	"05/31/2024 18:00 - 21:00"
		crime:	"Larceny of Bicycle"
		reporting_area:	"701"
		neighborhood:	"Riverside"
		location:	"0 PLEASANT ST, Cambridge, MA"
▼ 2:		file_number:	"2024-04573"
		date_of_report:	"2024-05-31T21:33:00.000"
		crime_date_time:	"05/31/2024 21:32 - 22:21"
		crime:	"Missing Person"
		reporting_area:	"504"
		neighborhood:	"Cambridgeport"
		location:	"200 FRANKLIN ST, Cambridge, MA"



<https://github.com/Chicago/RSocrata>



<https://github.com/socrata/socrata-py>

AI Tools: analyze Cambridge data with ChatGPT



Police_Department_Crash_Data_-_Updated_20...
CSV

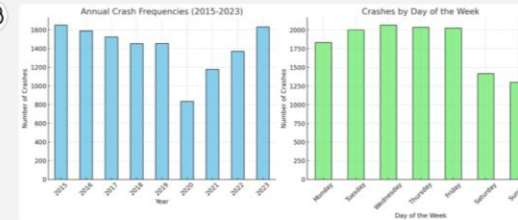
Analyze this Cambridge Police Department crash data. Do you notice any interesting or surprising trends? Please create charts to help me understand visually. Please exclude data from 2024 since it is incomplete.



The Cambridge Police Department crash data includes a vast array of columns, totaling 159, covering a wide range of details for each incident. Notable columns include:

- **Date Time:** The date and time of the incident.
- **Day of Week:** The day of the week on which the incident occurred.
- **Object 1 & Object 2:** Descriptions of the objects involved in the crash.
- **Street Number & Street Name:** The location of the incident.
- **May involve cyclist, May involve pedestrian, etc.:** Indicators of whether the crash involved cyclists, pedestrians, etc.
- Plus many more detailed attributes regarding the circumstances of each crash, involved parties, and outcomes.

Given the extensive nature of this dataset, a productive approach would be to identify key trends over time, such as annual crash frequencies, the involvement of cyclists or pedestrians, or crashes by day of the week. Since we should exclude data from 2024 due to its incompleteness, I will first filter the data accordingly and then proceed with analyzing trends and visualizing the results. [↩]



The visualizations offer a clear depiction of the identified trends in the Cambridge Police Department crash data:

1. **Annual Crash Frequencies (2015-2023):** This chart shows the number of crashes per year, highlighting the significant dip in 2020. Following this dip, there's a noticeable rebound in crash numbers, approaching pre-pandemic levels by 2023.
2. **Crashes by Day of the Week:** The frequency of crashes is higher on weekdays, with a peak on Wednesday, followed closely by Thursday and Friday. The number of crashes decreases notably on weekends, with Sunday having the fewest crashes.

These trends suggest a strong correlation between traffic patterns and the occurrence of crashes, with factors such as the COVID-19 pandemic affecting annual variations and typical weekly routines influencing daily fluctuations. [↩]

AI Tools: "chat up" an interactive dashboard

ChatGPT 5 Thinking

This is great. Can you create a dashboard showing some of these visualizations with filter controls that make sense?

Stopped thinking

Looks like we had a network issue. Can you try again to create a dashboard showing some of these visualizations with filter controls that make sense? Can you put it in the canvas?

Thought for 44s

Rodent Sightings Explorer (csv-powered Dashboard)

All set—I dropped an interactive dashboard into the canvas. It's CSV-powered and fast:

- Upload your latest "Rodent Sightings" CSV (the one you shared works).
- Use the left-side filters (date range, status, type, city, hour window, days of week, keyword search).
- The right-side charts update instantly: monthly trend, seasonality, day-of-week, hour-of-day, plus a map-free lat/lon heatmap and a "top hotspots" table (lat/lon rounded to ~100–150m).
- Hit "Download filtered CSV" to export any slice.

Nerd notes, because we like those:

- The app auto-detects sensible column names (e.g., `ticket_created_date_time`, `ticket_status`, `issue_type`, `lat`, `lng`).
- Spatial density uses a binned SVG heatmap—no external basemap, so it's privacy-friendly and works offline. Use the "bins" slider to change resolution.
- KPI row shows total requests for your current filters and a quick "last 12 months" comparison.

If you want, I can add: neighborhood/ZIP grouping, a base-map toggle, or a "compare years" mode (aligned by month) to see whether 2025 is diverging from earlier seasonal patterns.

Do you like this personality?

+ Ask anything

ChatGPT can make mistakes. Check important info.

Rodent Sightings Explorer (csv-...)

Rodent Sightings Explorer

Upload CSV Load sample Download filtered CSV

Filters

Date range

mm/dd/yyyy to mm/dd/yyyy

Status

☐ Acknowledged

☐ Archived

☐ Closed

☐ Open

Issue type

☐ 6+ garbage cans that seem to have rodent damage

☐ Birds being fed - potential rodent cause

☐ Black trash bags with rodent holes on front yard for months

City

☐ Cambridge

Hours (0-23)

0 to 23

Days of week

☒ Monday

☒ Tuesday

☒ Wednesday

☒ Thursday

☒ Friday

☒ Saturday

☒ Sunday

Search (address / description)

e.g., "Harvard", "trash", "alley"

Heatmap resolution (bins)

40 x 40

Detected columns

Date: ticket_created_date_time

Status: ticket_status

Type: issue_type

City: city

Lat/Lon: lat / lng

Rows loaded: 4,626

Help

Upload the .csv you shared (it should include column names like ticket_created_date_time, ticket_status, issue_type, lat, lng).

Use the filters on the left to slice by date range, status, type, city, time of day, and days of the week. The charts and hotspot

Total requests (current filters)

4,626

Last 12 months

493

vs prior 12 months

-4.6%

Monthly requests over time

118 months

Seasonality (by calendar month)

By day of week

By hour of day

Spatial density (lat/lon heatmap)

lat / lng

Top grid hotspots (lat, lon rounded to 3 decimals)

Rank	Grid	Requests
1	42.396,-71.130	47
2	42.368,-71.097	44
3	42.367,-71.098	40
4	42.365,-71.095	38
5	42.372,-71.098	37
6	42.363,-71.113	35
7	42.362,-71.105	34
8	42.369,-71.108	32
9	42.368,-71.096	32
10	42.375,-71.110	30
11	42.365,-71.093	30
12	42.368,-71.099	26

CITY OF CAMBRIDGE

23

RE

Thank you!

- You will receive an email link to these slides and a feedback form

- Feedback form: do it now! QR code and link

- Anonymous
- What you thought of this class
- Suggestions

- Email us: OpenData@CambridgeMA.gov

