

Blue and Yellow

Predicting the number of catering events per building that will would push it over the ½ ton food waste ban threshold



Problem

Problem 1

BU Dining and Catering services feed many people in a week. This generates a lot of food waste.

Problem 2

Massachusetts Department of Environmental Protection regulations ban disposal of food and other organic wastes from businesses and institutions that generate more than one-half ton of these materials per week.

Methodology

Step 1

Looked for a dataset that provides data regarding food waste by catering in colleges & universities in Boston

Step 2 (Exploratory Data Analysis)

Plotted data on various charts to see what sort of insights we can glean from the new dataset and how we can relate it to the problem at hand

Step 3

Calculated how many events will cause each building to go over $\frac{1}{2}$ ton of food waste



Datasets used

1. Predicting food waste dataset provided
2. ReFED Dataset



ReFED Dataset

About the dataset

- Multiple csv files regarding how food is used (waste, compost, etc.) in the US in general and per state
- Broken down further into multiple categories, such as Colleges & Universities, Caterers, K-12 institutions, etc.
- Focused on data regarding Colleges & Universities in Massachusetts



Assumptions

Assumption 1

Data from colleges & universities in Massachusetts maps to data from BU

Assumption 2

Sample we were provided reflects the daily average count of guests in the respective building throughout the year

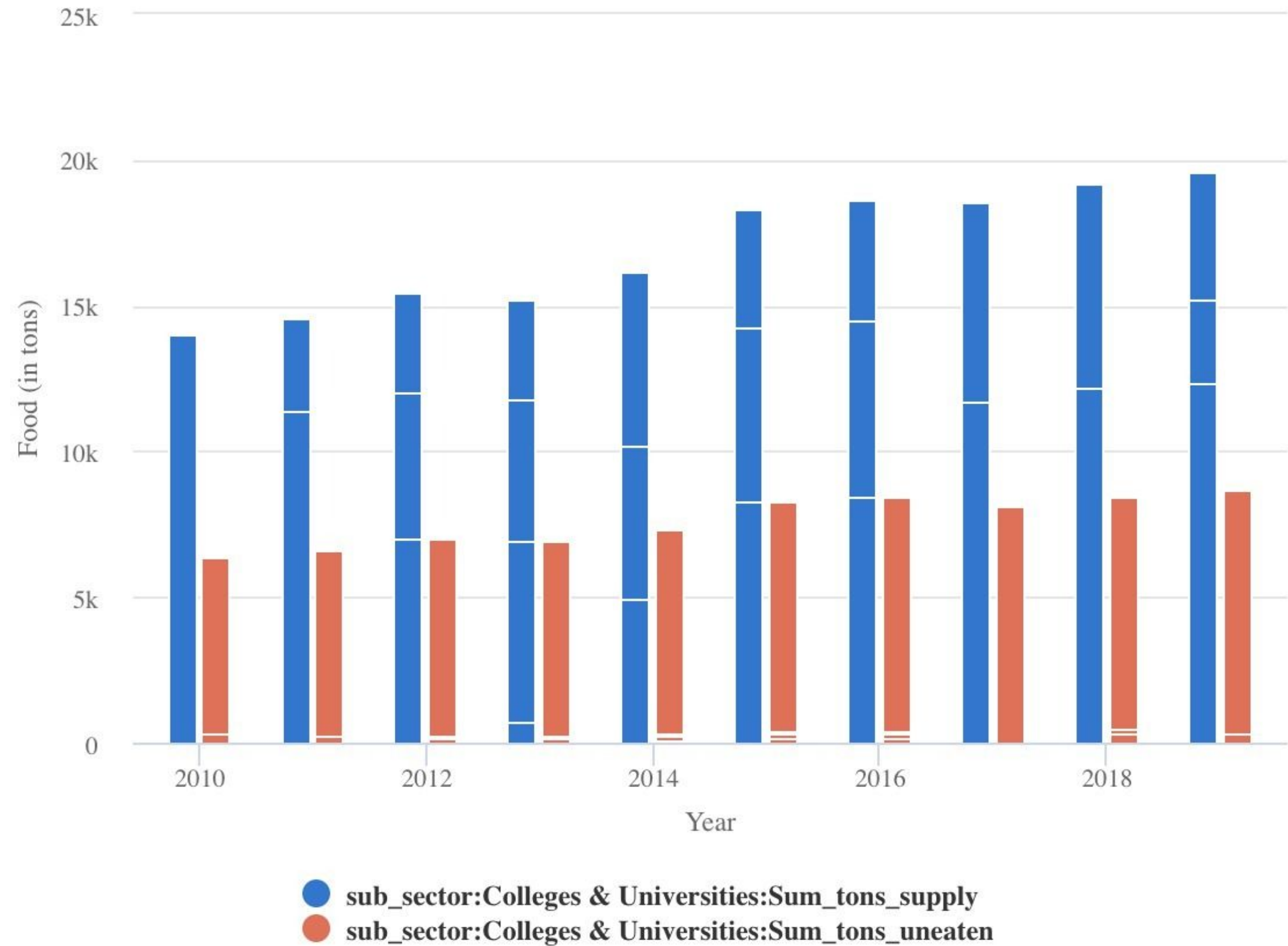


EDA

Plot of food supply and food uneaten in tons across the Years

Food Supply across Years

As of about 1 hour ago   

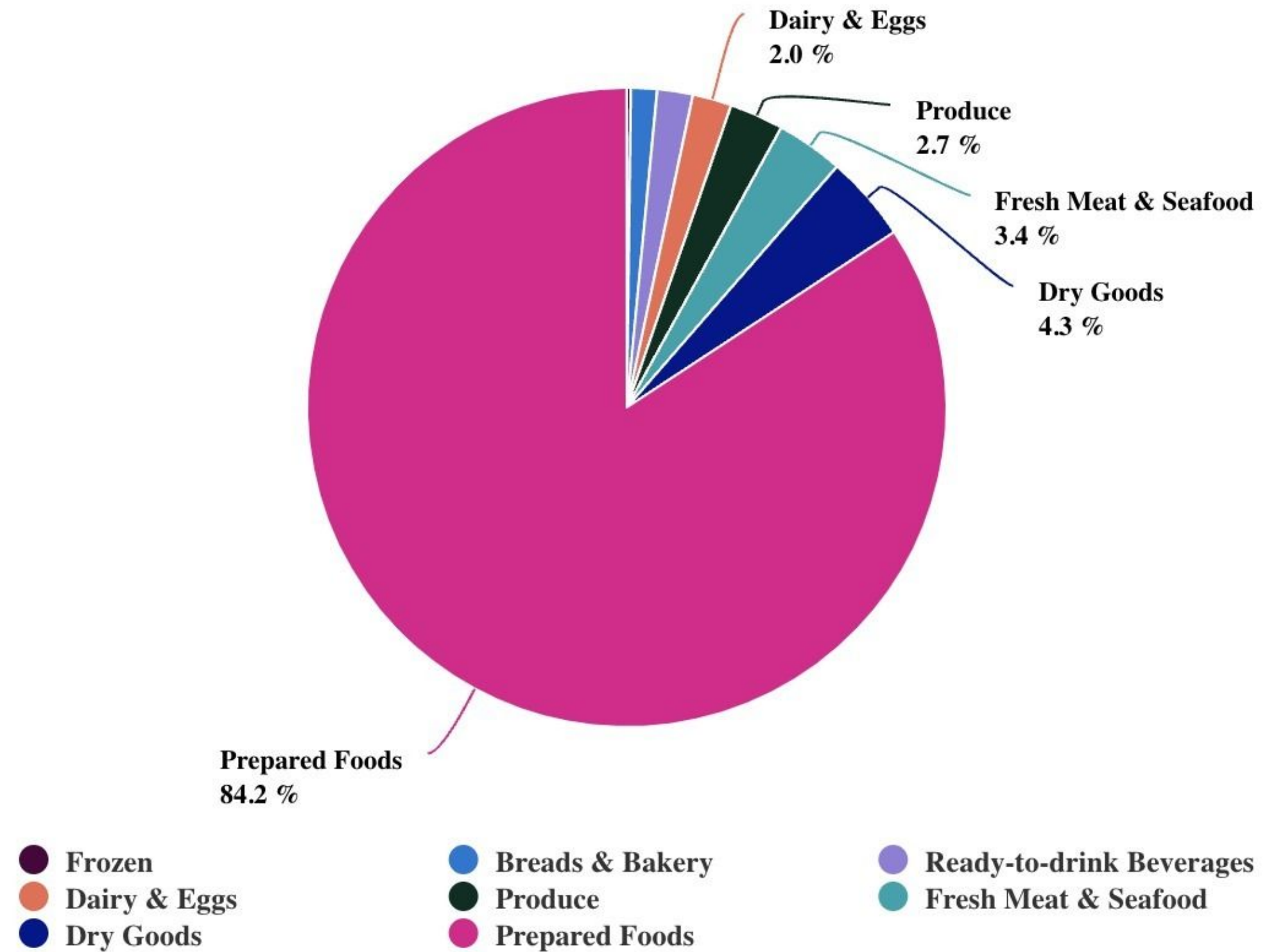


EDA

Plot of food type wasted as percentages

Prepared Foods Food Type has most meals wasted

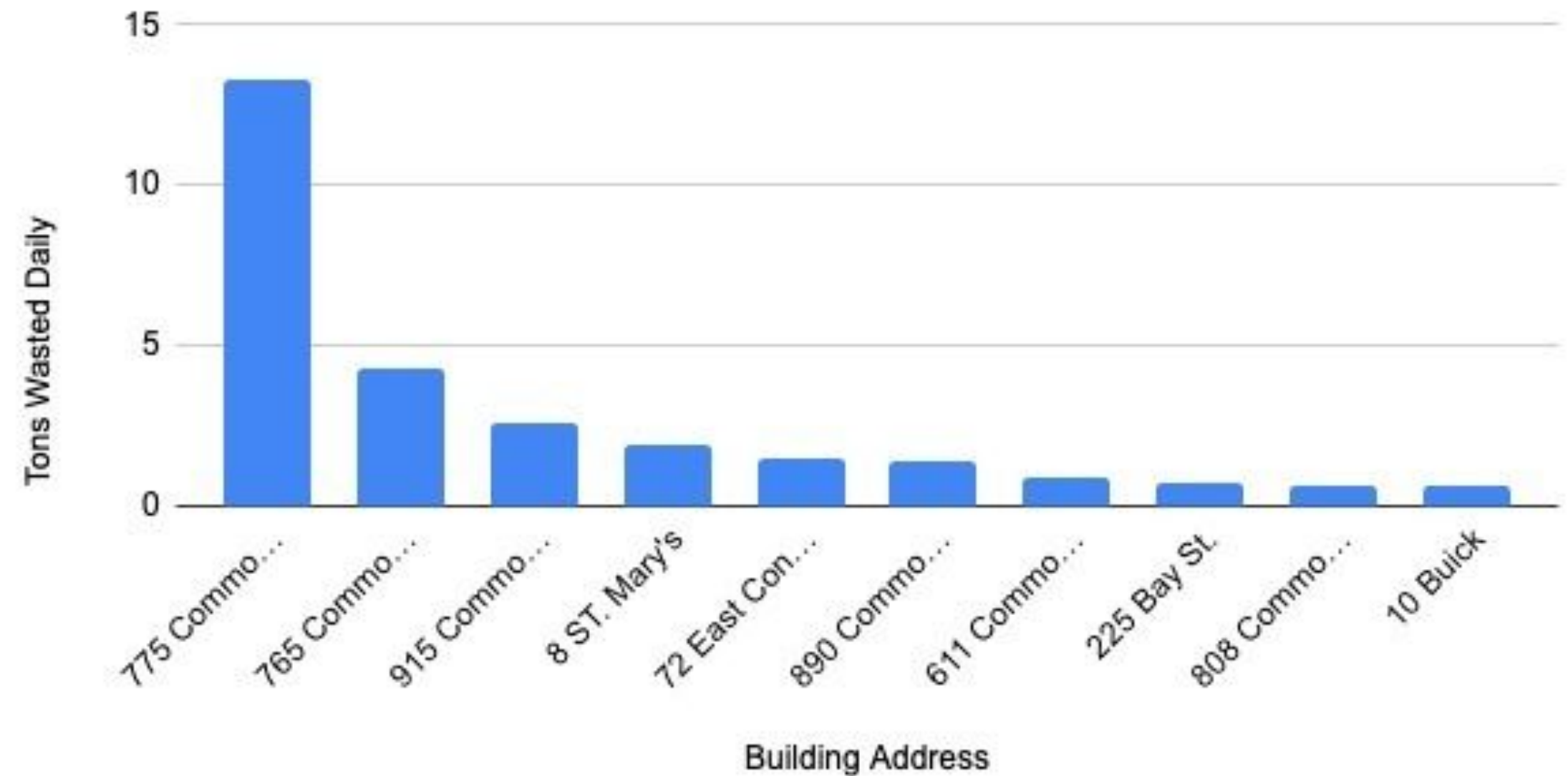
As of 1 minute ago ↻ ⋮



Result

Dining & Catering

Top 10 Buildings According to their Estimated Daily Wasted Tons



775 Comm. Ave - GSU Food Hall

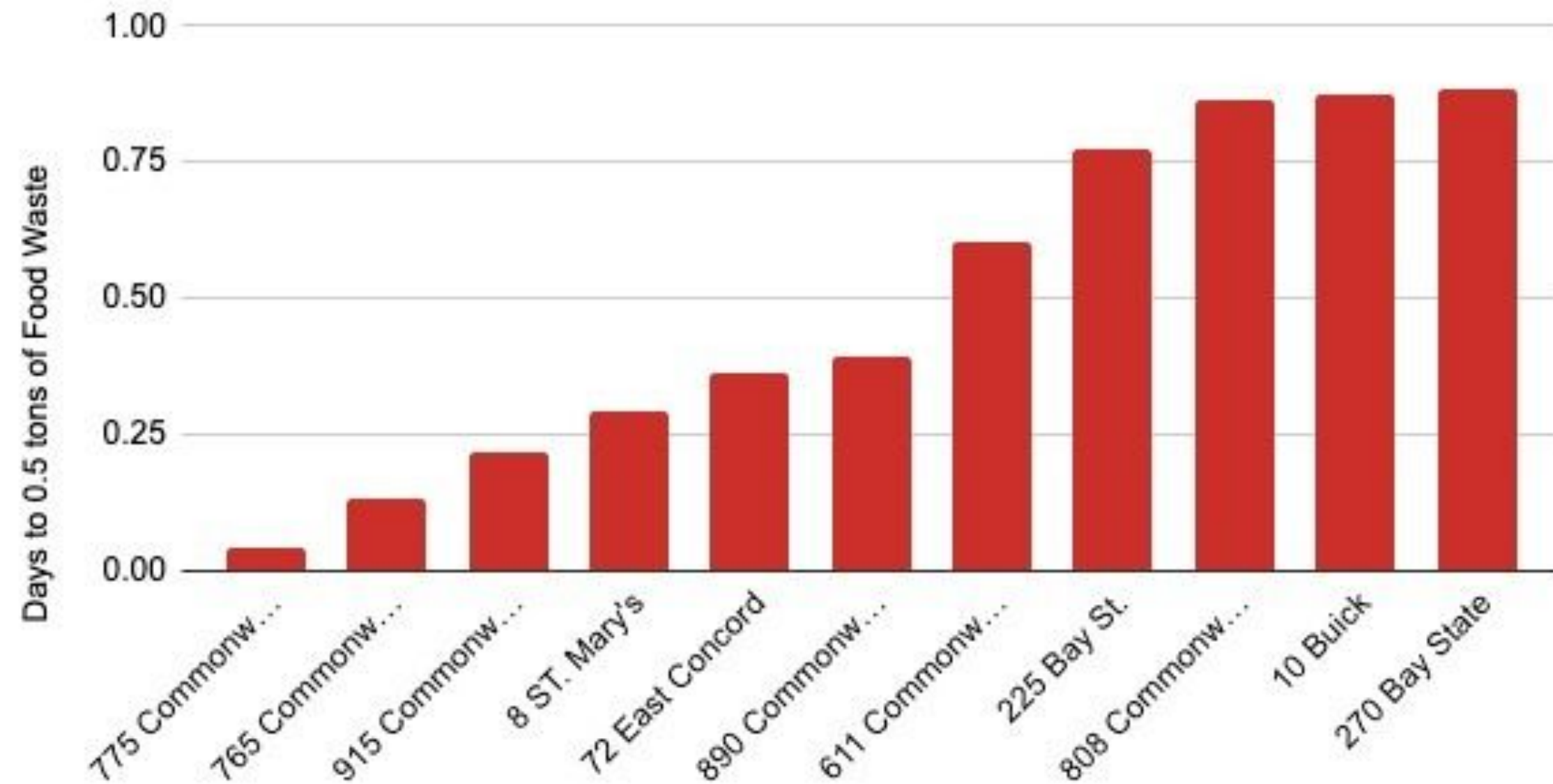
765 Comm. Ave - BU Law cafe

72 East Concord - BUMC Dining Hall

Result

Dining & Catering

Buildings which will take less than a Day to generate 0.5 tons of Food Waste



775 Comm. Ave - GSU Food Hall

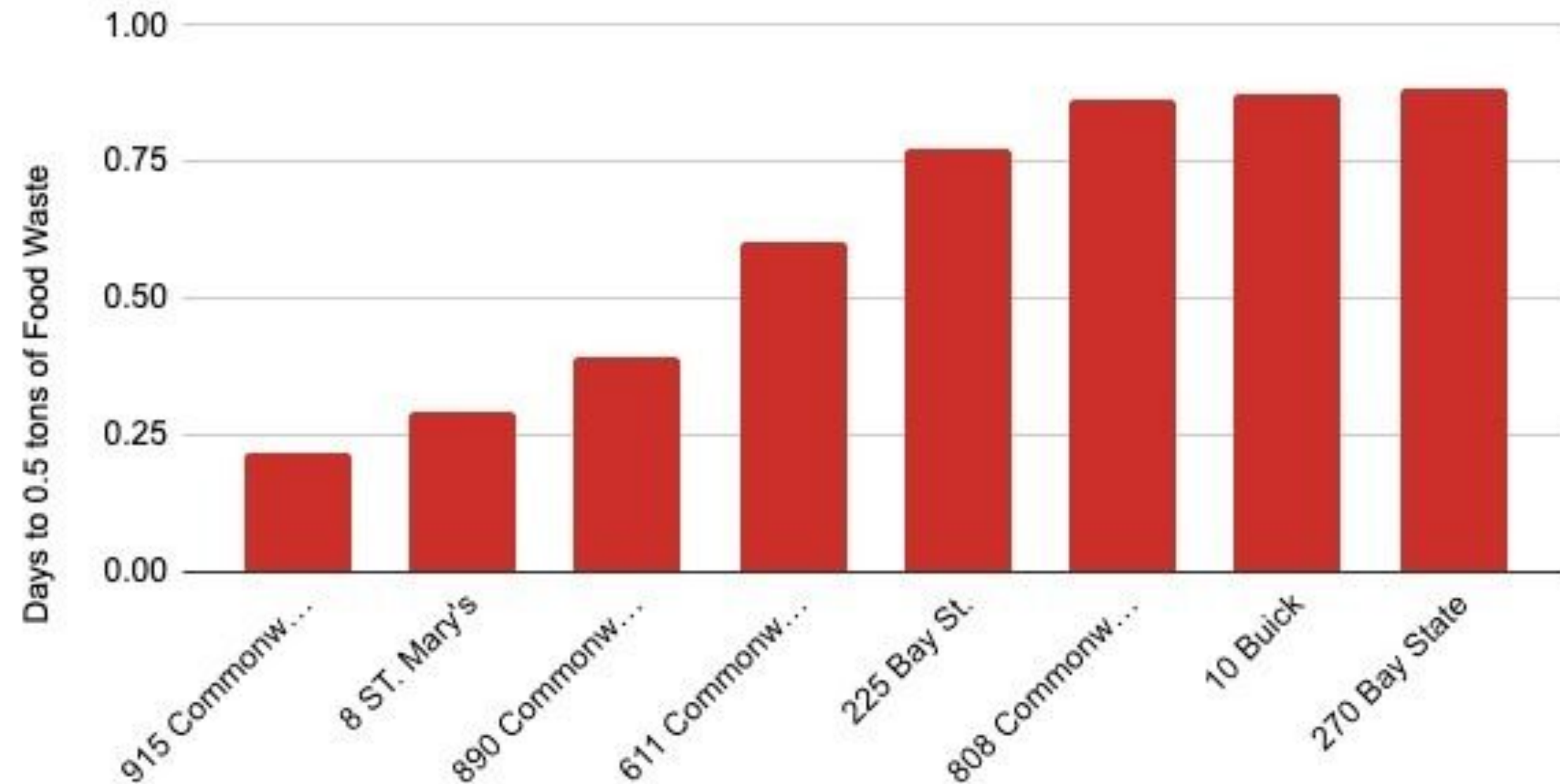
765 Comm. Ave - BU Law cafe

72 East Concord - BUMC Dining Hall

Result

Catering

Buildings which will take less than a Day to generate 0.5 tons of Food Waste for Catered Events



915 Comm Ave - FitRec

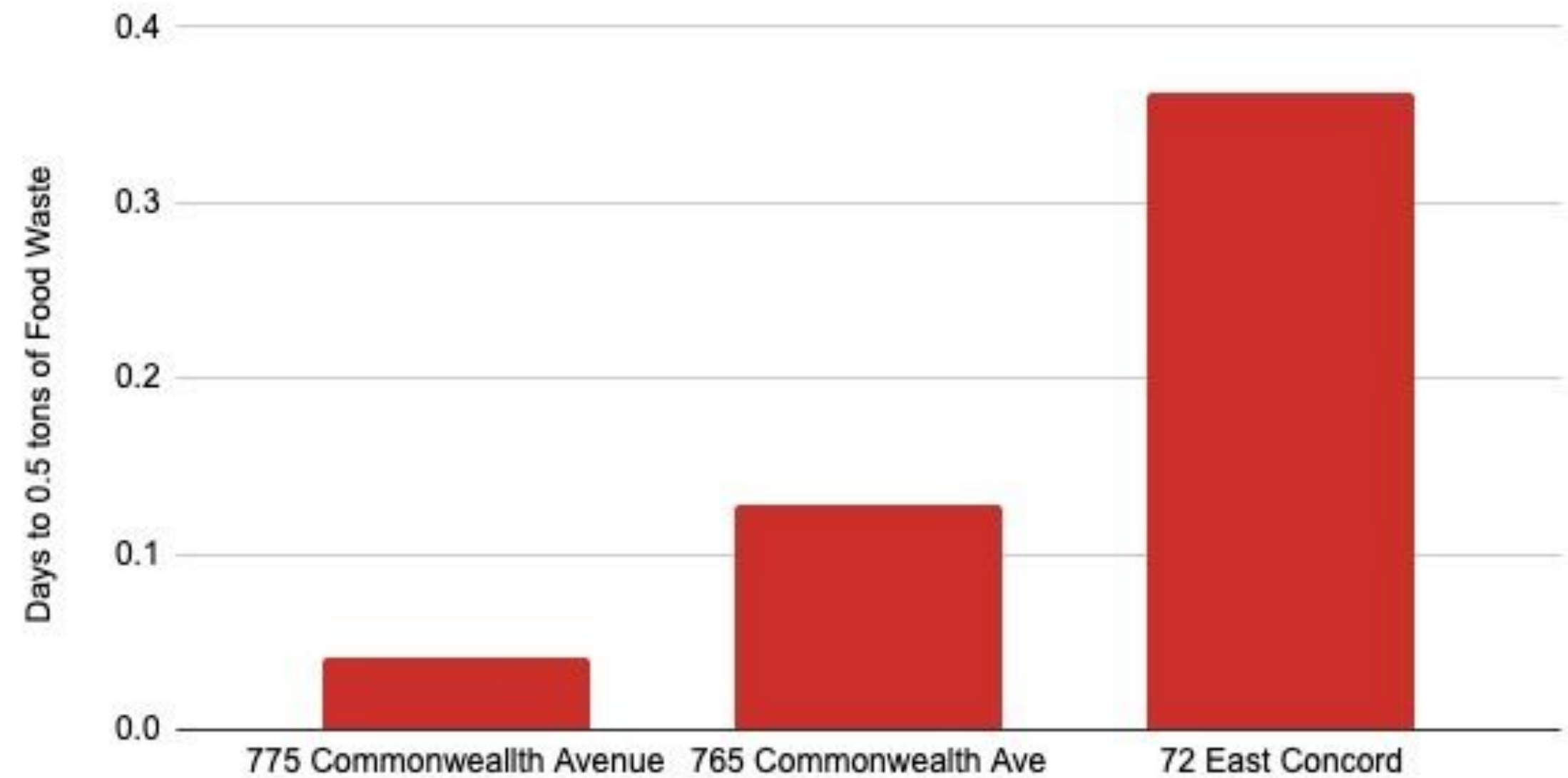
8 St Mary - Photonics Center

890 Comm Ave - Boston University Center for English Language & Orientation Programs (CELOP)

Result

Dining

Buildings which will take less than a Day to generate 0.5 tons of Food Waste (Dining)



775 Comm. Ave - GSU Food Hall

765 Comm. Ave - BU Law cafe

72 East Concord - BUMC Dining Hall

Results Overview



57 buildings

That reach ½ ton food waste in under 7 days (dining & catering).



11 buildings

That reach ½ ton food waste in 1 day (dining & catering).



8 buildings



That reach ½ ton food waste in 1 day (catering)

Technologies Used

ALTERYX

ETL pipeline to clean up the data

AZURE DATA EXPLORER WITH KUSTO QUERIES

Used KQL to plot graphs

PYTHON AND ITS LIBRARIES

For logical data cleanup on categorical data

TABLEAU AND MS EXCEL

Data Visualization

The Team

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Questions?

