



# Exam School Admissions Task Force

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5.11.2021

# Overview

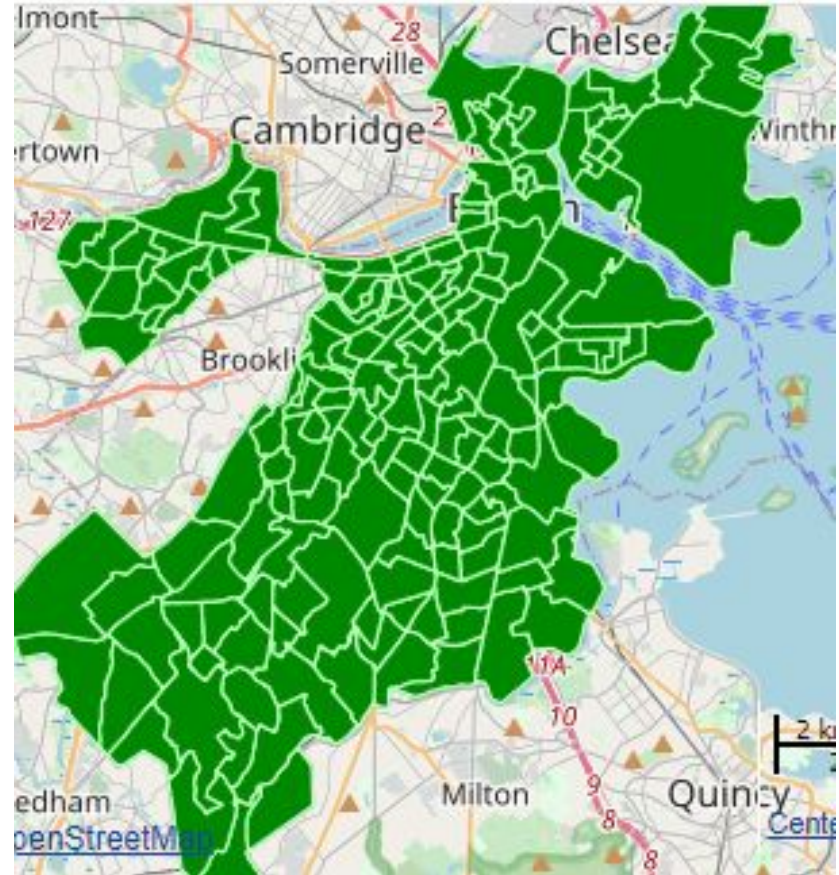
- Census Tracts vs. Geocodes
- Opportunity Index
- Top Percentage of School
- Percentage of Economically Disadvantaged Students by School
- Chicago Tier Replication

# Census Tracts & Geocodes

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## Census Tracts in the city of Boston

- Created by the US Census
- Approximately 178 census tracts in the city of Boston
- Reviewed every 10 years as part of the census process
- American Community Survey data is available by census tract, and is provided with both 1-year and 5-year averages.



## Geocodes in the city of Boston

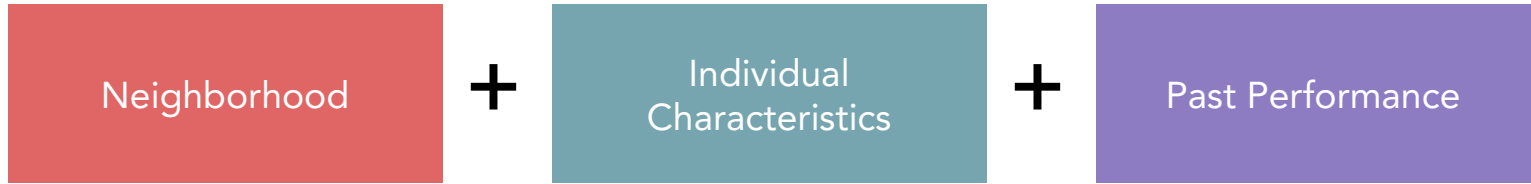
- Originally created in the 70's
- Over 800 geocodes in the city
- Lack of clarity on if / how / when geocodes are re-drawn
- American Community Survey data not available by geocode



# Opportunity Index

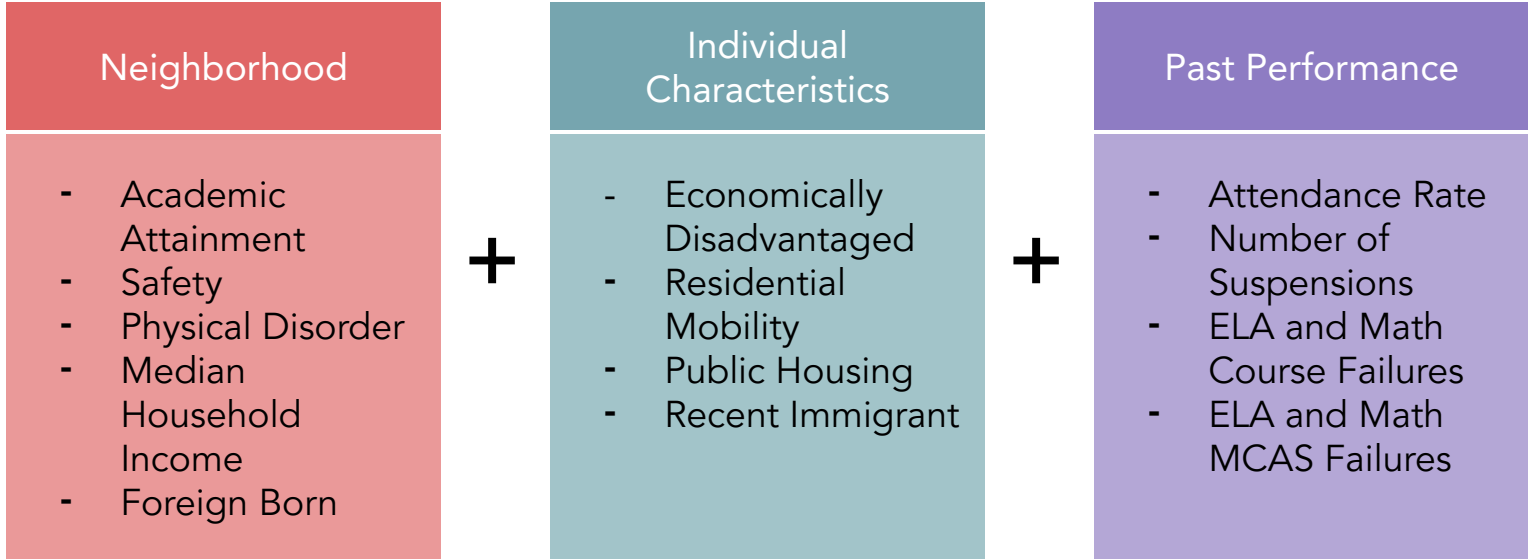
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# What is the Opportunity Index?



Each school receives an Opportunity Index Score between .01-.99; this score is a weighted composite of the neighborhood factors, individual student characteristics, and student past performance of each school's population.

# Components of the Opportunity Index



- School OI scores range from 0.17 to 0.89.

| OI Score Range   | Number of Schools |
|------------------|-------------------|
| Less than 0.25   | 5                 |
| 0.25 - 0.50      | 43                |
| 0.51 - 0.75      | 66                |
| Higher than 0.75 | 10                |



# Top Percentage of School

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# Schools with 6th and 8th Grade

| School Type          | 6th Grade         |                | 8th Grade         |                |
|----------------------|-------------------|----------------|-------------------|----------------|
|                      | Number of Schools | Total Students | Number of Schools | Total Students |
| BPS                  | 58                | 3196           | 47                | 3413           |
| Horace Mann Charter  | 3                 | 220            | 3                 | 258            |
| Commonwealth Charter | 14                | 1320           | 13                | 1268           |
| Private/Parochial    | 22                | 445            | 18                | 390            |
| <b>TOTAL</b>         | <b>97</b>         | <b>5181</b>    | <b>81</b>         | <b>5329</b>    |

- Based on schools listed on DESE's School and District Profiles ([BPS + Charter, Private/Parochial](#))
- Due to differing school sizes, the top percentages of each school would result in numbers higher than 5% and 10% of the total students:

|     | 6th Grade | 8th Grade |
|-----|-----------|-----------|
| 5%  | 258       | 268       |
| 10% | 526       | 541       |

# **Economically Disadvantaged by School**

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# Schools by Percentage of Economically Disadvantaged Students

- Based on schools listed on DESE's School and District Profiles ([BPS + Charter](#)). Data not available for private/parochial schools.
- Of schools serving either 6th or 8th grade:

| Percent Economically Disadvantaged | 6th Grade | 8th Grade |
|------------------------------------|-----------|-----------|
| Less than 25%                      | 1         | 2         |
| 25 - 50%                           | 11        | 10        |
| 50 - 75%                           | 43        | 33        |
| More than 75%                      | 20        | 18        |

# Creating Tiers with Census Tract Data

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(replicating Chicago's methodology)

# Methodology

Chicago uses variables from the American Community Survey, an annual sampling done by the US Census Bureau. ACS reports one year averages and 5 year averages for each census tract. The most recent data available is from 2018, so the 5 year average includes 2014 - 2018.

- Median household income
- Percent of households occupied by the owner
- Percent of families headed by a single parent
- Percent of households where a language other than English is spoken
- Educational attainment -- weighted average of 5 data points
  - Do not have high school diploma (0.2)
  - High school diploma (0.4)
  - Some college (0.6)
  - College degree (0.8)
  - Advanced degree (1.0)

# Methodology

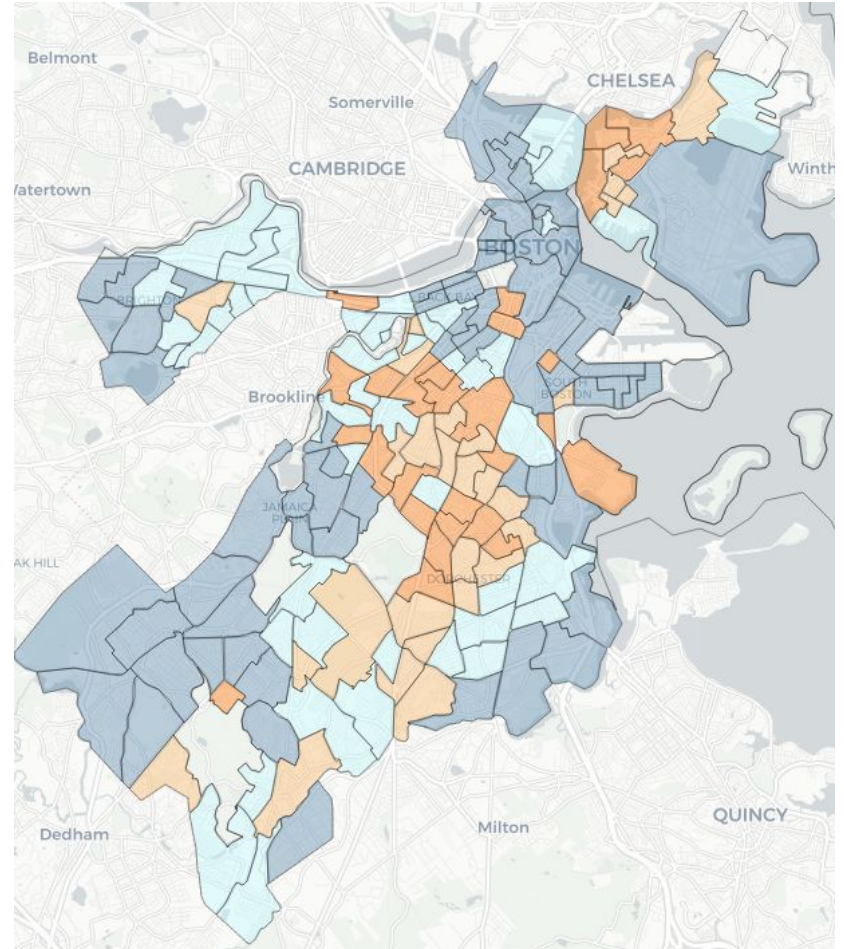
Each variable is ranked in order to assign a percentile to each census tract. The five percentiles are then added together to give each census tract a “socioeconomic score”. Using ACS data of percentage of school-aged children, census tracts are then given a “tier” with equal percentages of students in each tier (25% in tier 1, 25% in tier 2, 25% in tier 3, 25% in tier 4.) Tier 1 indicates census tracts with the lowest socioeconomic score.

*Note: Chicago also later added a school performance metric into the socioeconomic score calculation. It is a weighted average of performance on state assessment tests based on the number of students attending schools in that census tract. For simplicity sake, this was not included in the replication analysis done here, as we would need to make Boston and MA specific decisions.*

# Boston Map of Tiers

Tiers are done at the census tract level. The number of tracts in each tier is relative to the percentage of school-aged children, as determined by the American Community Survey.

- Tier 1** (highest need) = 27 tracts
- Tier 2** = 29 tracts
- Tier 3** = 47 tracts
- Tier 4** = 65 tracts

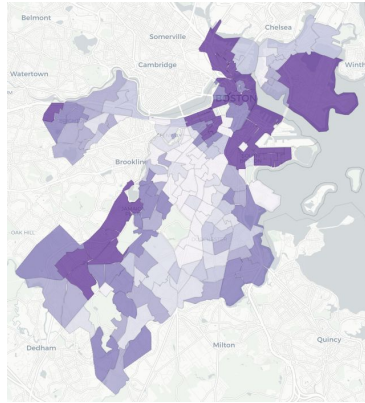




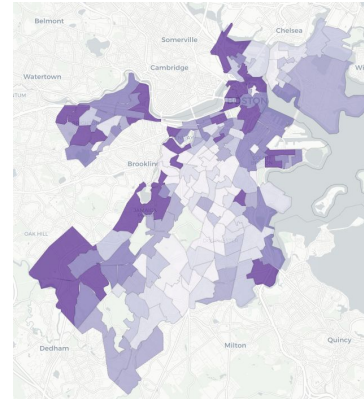
Each map displays a gradient that represents the percentile of each census tract for each variable. Darker numbers represent higher percentiles.

NOTE: single parent households and households where a language other than English are spoken are reverse coded.

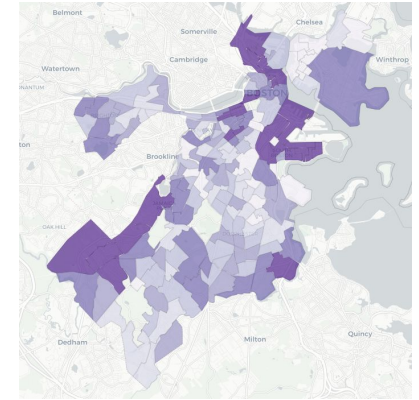
## Median household income



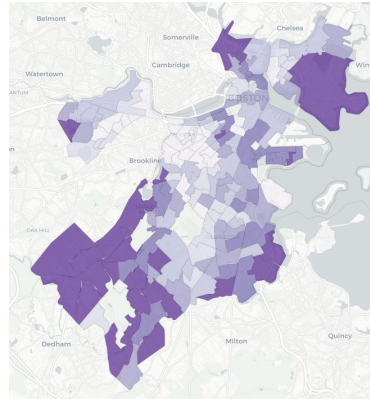
## Percent of families headed by a single parent



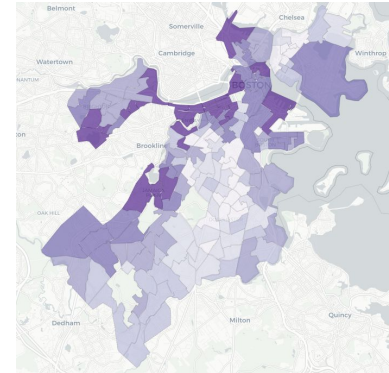
## Percent of households where a language other than English is spoken



## Percent of households occupied by the owner



## Educational attainment



## Chicago's School Performance Variable

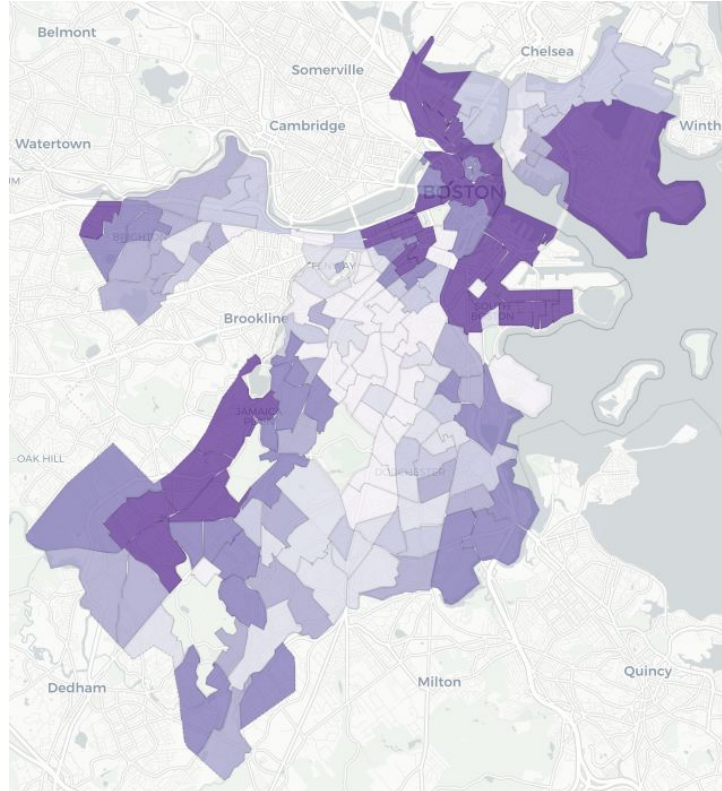
A weighted average of schools' state standardized test composite scores.

Example: let's say there were 300 elementary students in a given tract, and they all went to one of two schools. A hundred of the students went to a school with a composite score of 75 and 200 students went to a school with a composite score of 60. The weighted composite score would be 65.

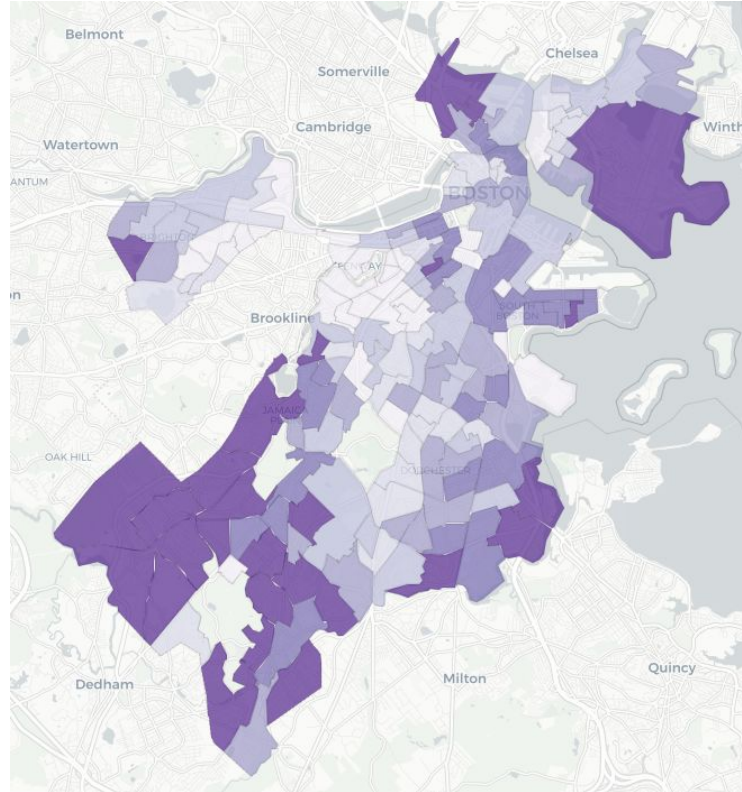
$$\text{School Performance Variable} = (100/300)*75 + (200/300)*60 = 65$$

Source: <http://cpstiers.opencityapps.org/tier-calculation.html>

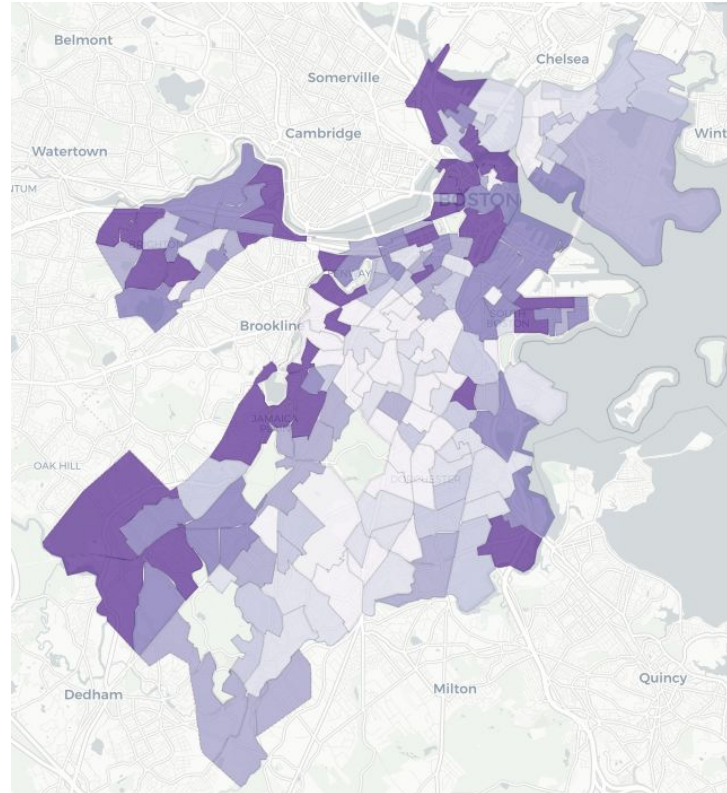
# Median household income



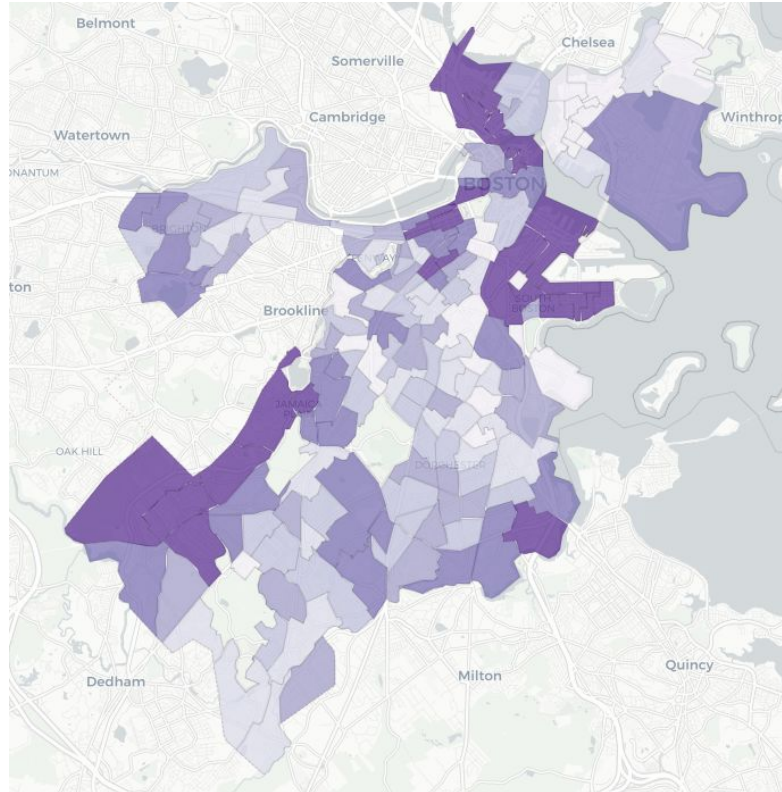
# Percent of households occupied by the owner



# Percent of families headed by a single parent



# Percent of households where a language other than English is spoken



# Educational attainment

