Target Area Recommendations

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Data processing

I created a dataset using the election data available on the City of Boston website. I included municipal elections from November 2005 to November 2017. I excluded special municipal elections and preliminary municipal elections. I did not include data from the November 2019 municipal election because, as of right now, I only have access to unofficial election data. However, I do compare my findings with the 2019 unofficial results (see the Recommendations section at the end of this document).

The dataset contains 5 variables (columns (ward, precinct, election date, number of registered voteres, number of votes cast, number of residents). I calculate a 6th (turnout, defined as number of votes divded by numbered of registered voters as a percentage).

```
# Reading in and processing the data

data = read_xlsx("elections_data.xlsx") %>%
  mutate(election = as.character(election),
         num_registered = as.numeric(num_registered),
         num_voters = as.numeric(num_voters),
         num_residents = as.numeric(num_residents),
         turnout = round(num_voters/num_registered*100,2))
```

```
# A preview of the data

head(data)
```

```
## # A tibble: 6 x 7
##    ward precinct election   num_registered num_voters num_residents turnout
##   <dbl>    <dbl> <chr>                <dbl>      <dbl>         <dbl>   <dbl>
## 1     1        1 2017-11-07            1413        495          1871    35.0
## 2     1        2 2017-11-07            1053        298          2006    28.3
## 3     1        3 2017-11-07            2389        711          3391    29.8
## 4     1        4 2017-11-07             816        230          2099    28.2
## 5     1        5 2017-11-07            1263        355          2681    28.1
## 6     1        6 2017-11-07            1184        313          2576    26.4
```

Finding the lowest turnout areas

```
# Calculating the lowest turnout wards/precincts from 2017-2005, excluding Ward 1 Precinct 15

lowest_turnout = data %>%
  filter(!(ward == 1 & precinct == 15)) %>%
  group_by(election) %>%
  top_n(-10, turnout) %>%
  arrange(election, turnout)
```

```
# Creating a frequency table for lowest turnout wards/precincts (wards on left, precincts on top)
ftable(lowest_turnout$ward, lowest_turnout$precinct)
```

```
##     1 2 3 4 5 7 8 9 10 14 15
##
## 4   0 0 0 0 0 0 0 6  7  0  0
## 5   0 0 0 0 0 0 0 1  3  0  0
## 21  5 7 7 7 7 3 7 3  0  3  4
```

The following wards/precincts were among the ten wards/precincts with the lowest voter turnout rates in all 7 municipal elections from 2017-2005:

- Ward 4 Precinct 10 (ranges from 1.03% to 9.17%)
- Ward 21 Precinct 2 (ranges from 0.55% to 4.31%)
- Ward 21 Precinct 3 (ranges from 2.21% to 10.55%)
- Ward 21 Precinct 4 (ranges from 1.93% to 12.80%)
- Ward 21 Precinct 5 (ranges from 3.56% to 15.26%)
- Ward 21 Precinct 8 (ranges from 3.03% to 14.54%)

Finding the highest turnout areas

```
# Calculating the highest turnout wards/precincts from 2017-2005, excluding Ward 1 Precinct 15

highest_turnout = data %>%
  filter(!(ward == 1 & precinct == 15)) %>%
  group_by(election) %>%
  top_n(10, turnout) %>%
  arrange(election, turnout)

# Creating a frequency table for lowest turnout wards/precincts (wards on left, precincts on top)

ftable(highest_turnout$ward, highest_turnout$precinct)
```

```
##     1 2 3 4 6 7 8 9 10 11 12 13 14 16 17 18 19 20
##
## 2   0 0 0 0 1 0 0 0  0  0  0  0  0  0  0  0  0  0
## 6   0 0 0 0 1 0 0 0  0  0  0  0  0  0  0  0  0  0
## 7   4 0 1 0 0 0 0 0  0  0  0  0  0  0  0  0  0  0
## 13  0 0 0 0 0 0 0 0  4  0  0  0  0  0  0  0  0  0
## 16  0 0 0 0 0 3 2 6  1  1  7  0  0  0  0  0  0  0
## 17  0 0 0 0 0 0 0 1  0  0  1  0  1  0  0  0  0  0
## 18  0 0 0 0 0 0 0 0  0  0  0  0  0  3  0  0  0  2
## 19  0 2 0 0 1 0 0 0  0  0  1  0  0  0  0  0  0  0
## 20  0 0 0 1 1 0 0 0  0  3  4  1  7  1  2  2  4  0
## 21  0 0 0 0 0 0 0 0  0  0  0  1  0  0  0  0  0  0
```

The following wards/precincts were among the ten wards/precincts with the highest voter turnout rates in all 7 municipal elections from 2017-2005:

- Ward 16 Precinct 12 (ranges from 39.31% to 73.81%)
- Ward 20 Precinct 14 (ranges from 26.85% to 67.85%)

Recommendations

Our key target areas should be **Ward 4 Precinct 10, Ward 21 Precinct 2, and Ward 21 Precinct 3** for the low turnout areas & **Ward 16 Precinct 12 and Ward 20 Precinct 14** for the high turnout areas.

NOTE: I compared the findings above with the unofficial election results from the November 2019 municipal election. My recommended target areas are consistent with the unofficial turnout numbers: the recommended low turnout areas are among the 5 lowest turnout wards/precincts in 2019 and likewise for the recommended high turnout areas.