# An Investigation of Bias in LAPD traffic stops

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# Problem statement

# Problem Statement

**Purpose**

Identify areas of potential bias within vehicle and pedestrian stops made by the Los Angeles Police Department.

**Audiences**

- Los Angeles Police Department

- Citizen groups interested in police-community relations

**Goals**

Identify target areas within the LAPD that could benefit from interventions such as anti-bias training with the goal of reducing bias and improving relations and trust between police and community.

# Data and Methodology

# Data Sources

- Vehicle and Pedestrian Stop Data 2010 to Present
  - Main data source

- LAPD Reporting districts
  - Used to determine division where a stop occurred

- Census_Data_by_Neighborhood_Council
  - 2010 population data for the city of LA, broken down by neighborhood and ethnicity

- Map of LAPD divisions
  - Used to map LAPD divisions to neighborhoods

- Map of Los Angeles neighborhood councils
  - Used to map LAPD divisions to neighborhoods

- Census.gov
  - For verifying population distributions

# Cleaning census data

- Combined American Indian, Multi-decent and Other categories into "Other"

- The Hispanic column was missing.
  - Filled it in by subtracting the sum of all the other ethnicities from the total
  - Verified percentages with an external data source

- Assumption: population distributions not changing by year or by location

- Analysis does not account for day-to-day mobility. i.e people may be stopped in an area where they do not reside
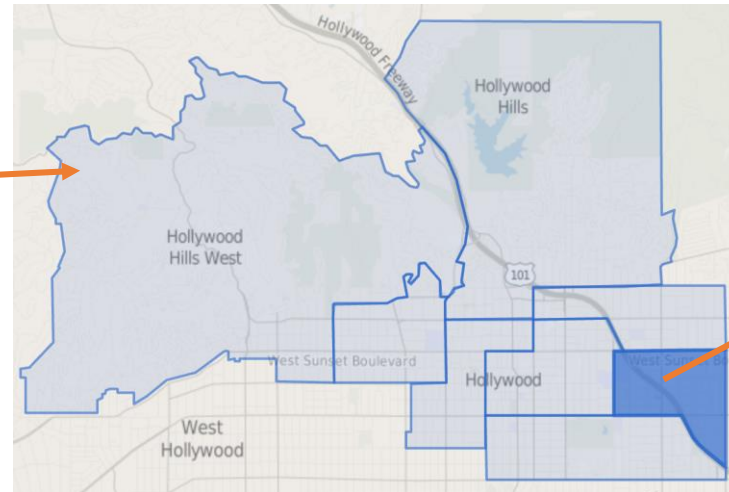
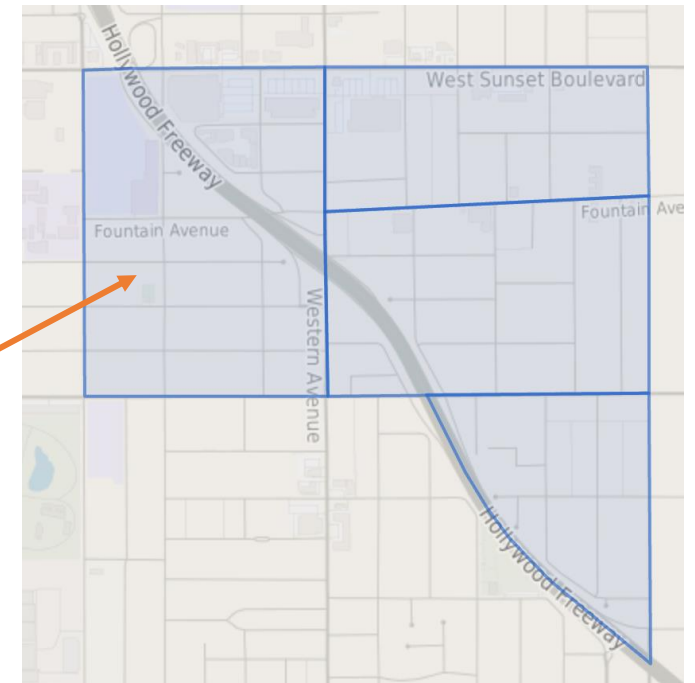# Geographic structure of LAPD

Division
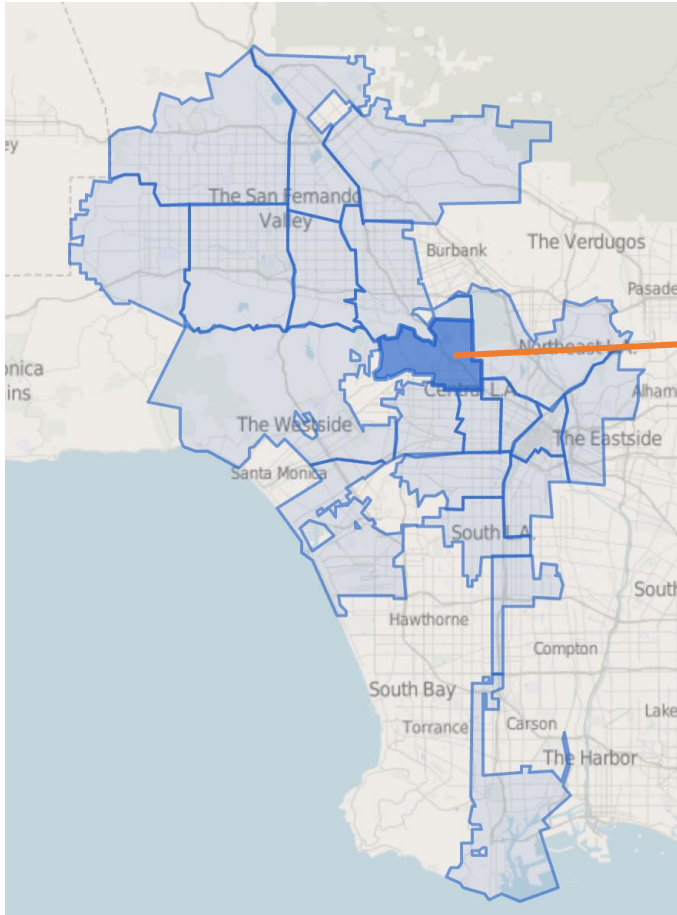


Each division belongs to one of four bureaus

Basic car unit



Each basic car unit belongs to one division

Reporting district



Each reporting district belongs to one basic car unit

# Population mapping

1. Determined division for each stop by joining stops data (which has stop location by reporting district) to table of LAPD reporting districts

2. Manually mapped neighborhood councils to division
   - Note: not an exact match for every division
   - When a neighborhood fell in more than one division, it was mapped to the division containing the largest area

3. Totaled population counts in each division to get population ethnicity estimates
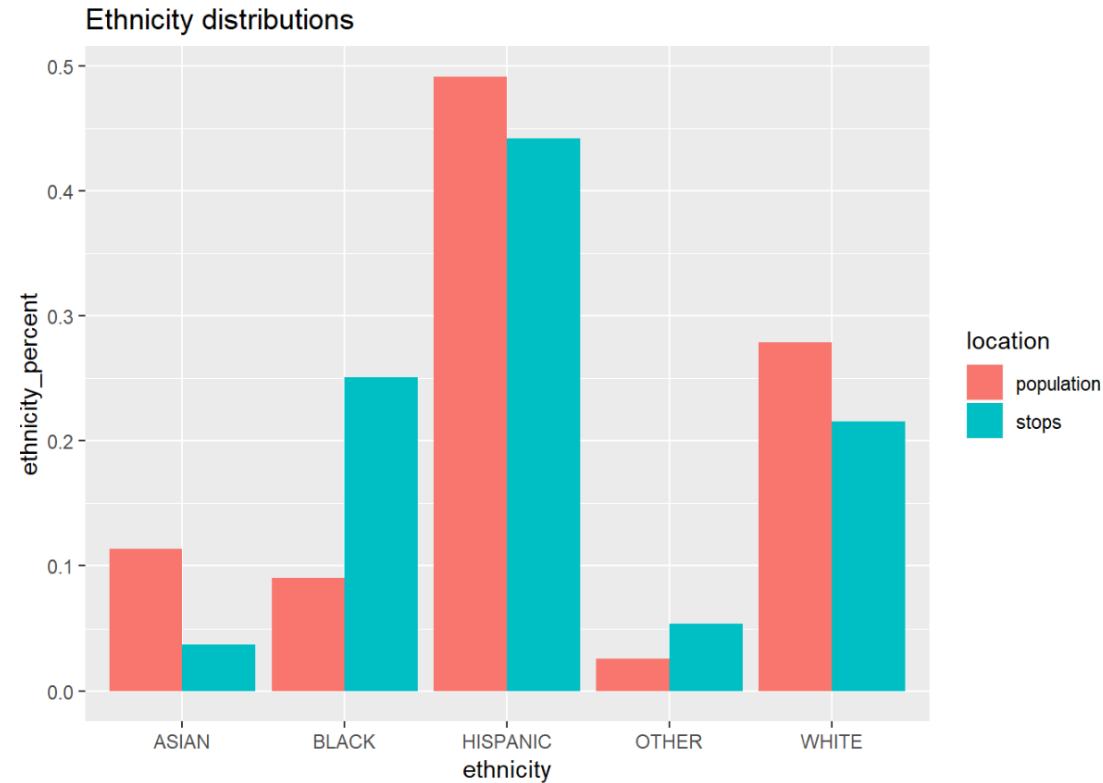
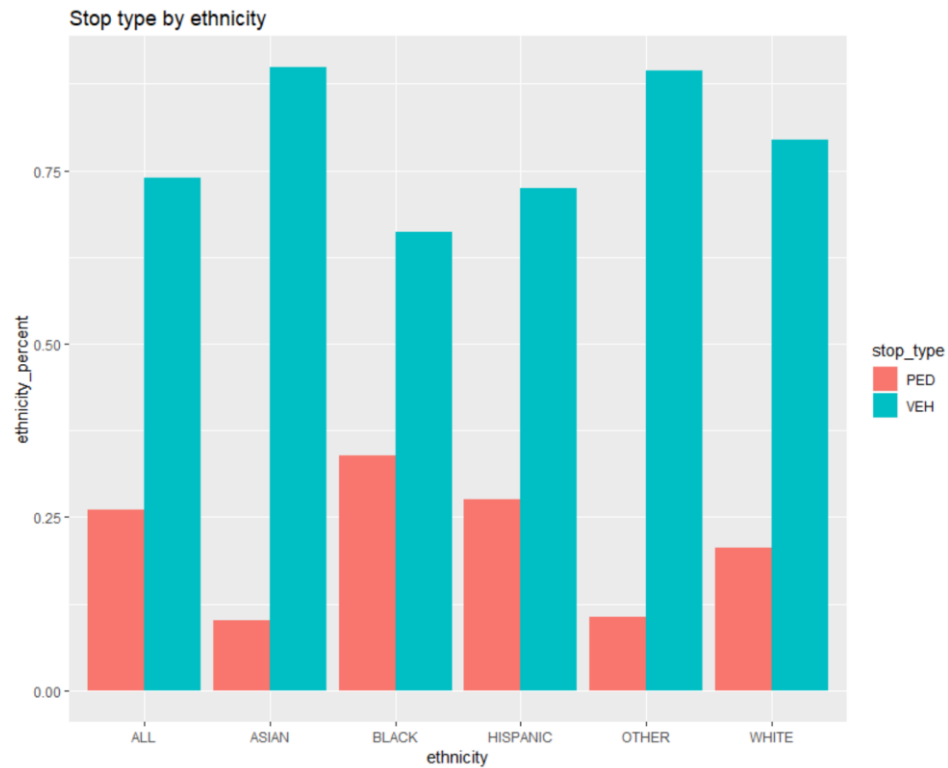LAPD Divisions
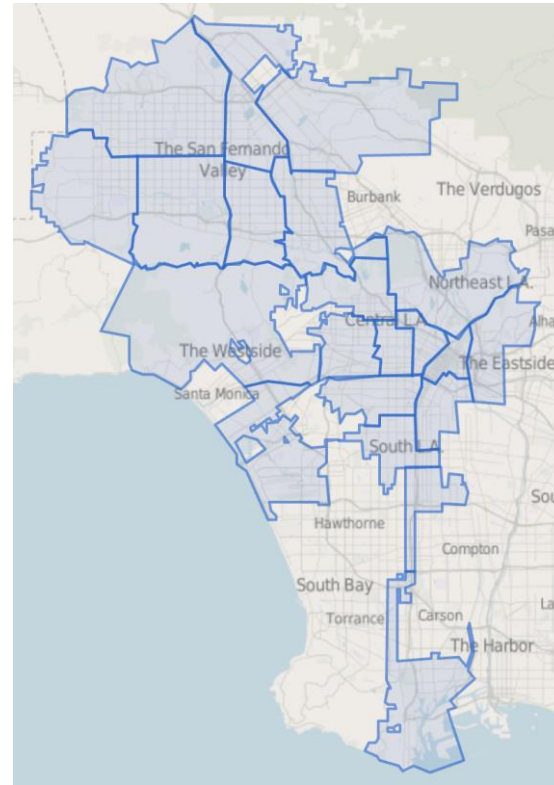


LA Neighborhood councils
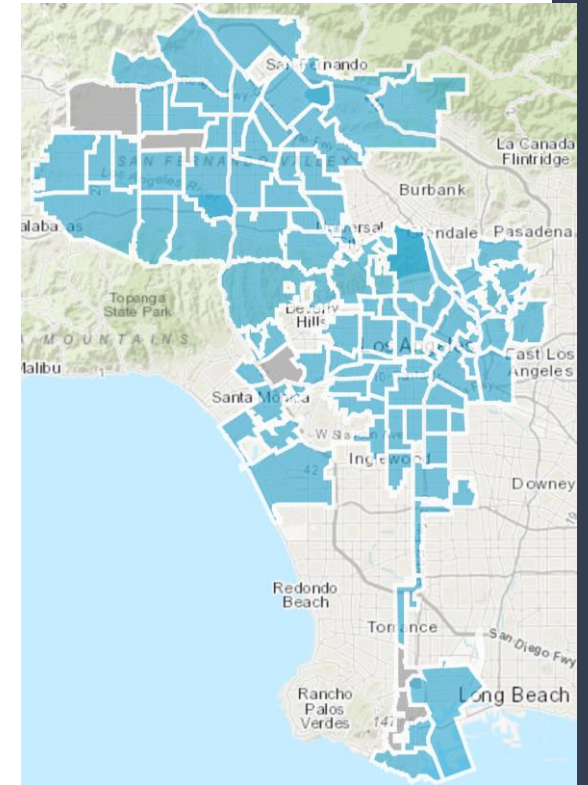
# Data overview

# Traffic stops vs population


Ethnicity distributions

- Blacks are stopped at a much higher rate compared to the population than other ethnicities

- Blacks account for 25% of stops but only 9% of the city population

# Pedestrian vs vehicular stops
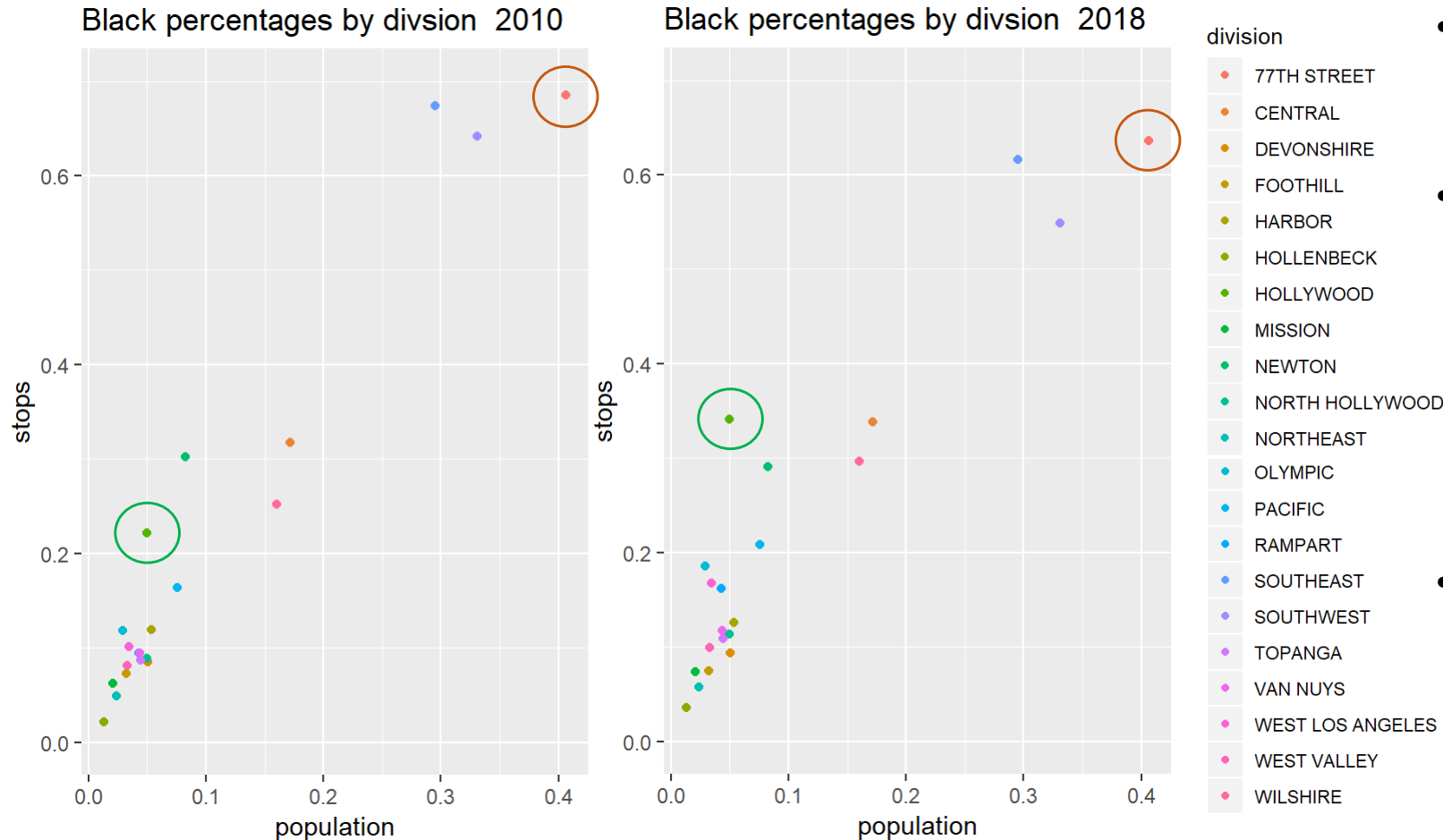

Stop type by ethnicity

- 74% of all traffic stops are vehicular and 26% are pedestrian

- Blacks are more likely to be involved in pedestrian stops
  - 34% of black stops are pedestrian
  - 33% of pedestrian stops are of black people

- Asians and Whites are more likely to be involved in vehicular stops

# Trends in Black stops
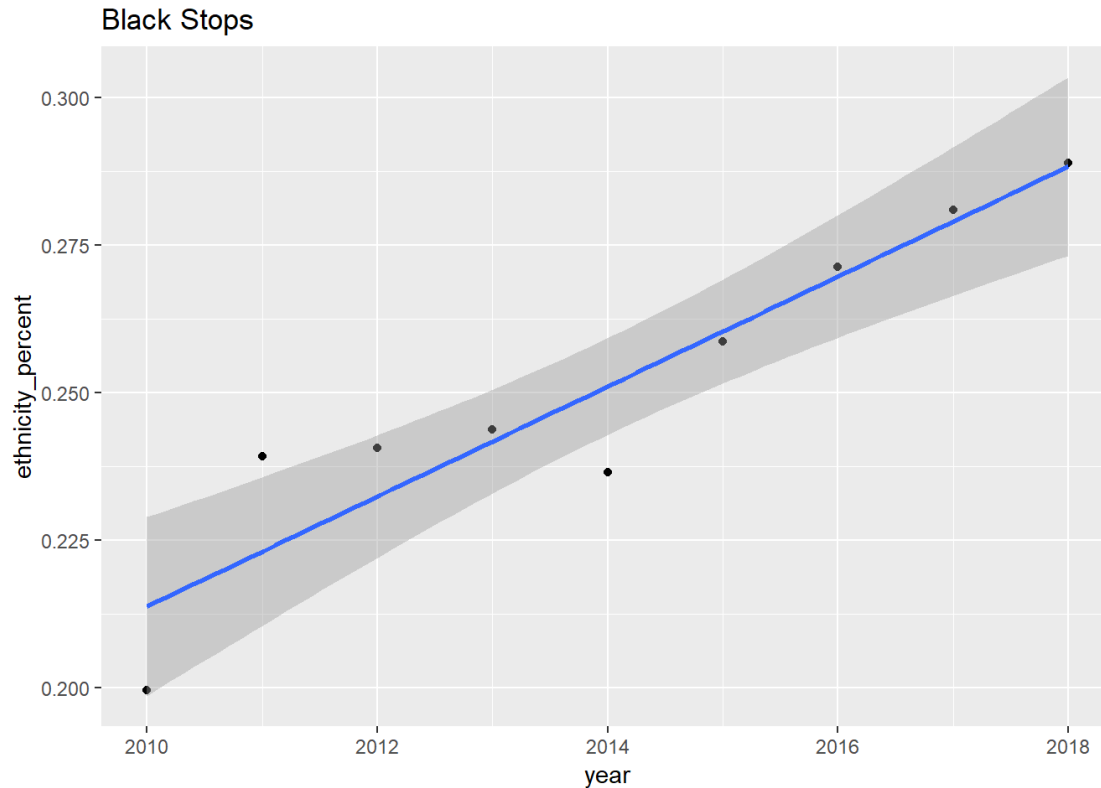


Black Stops

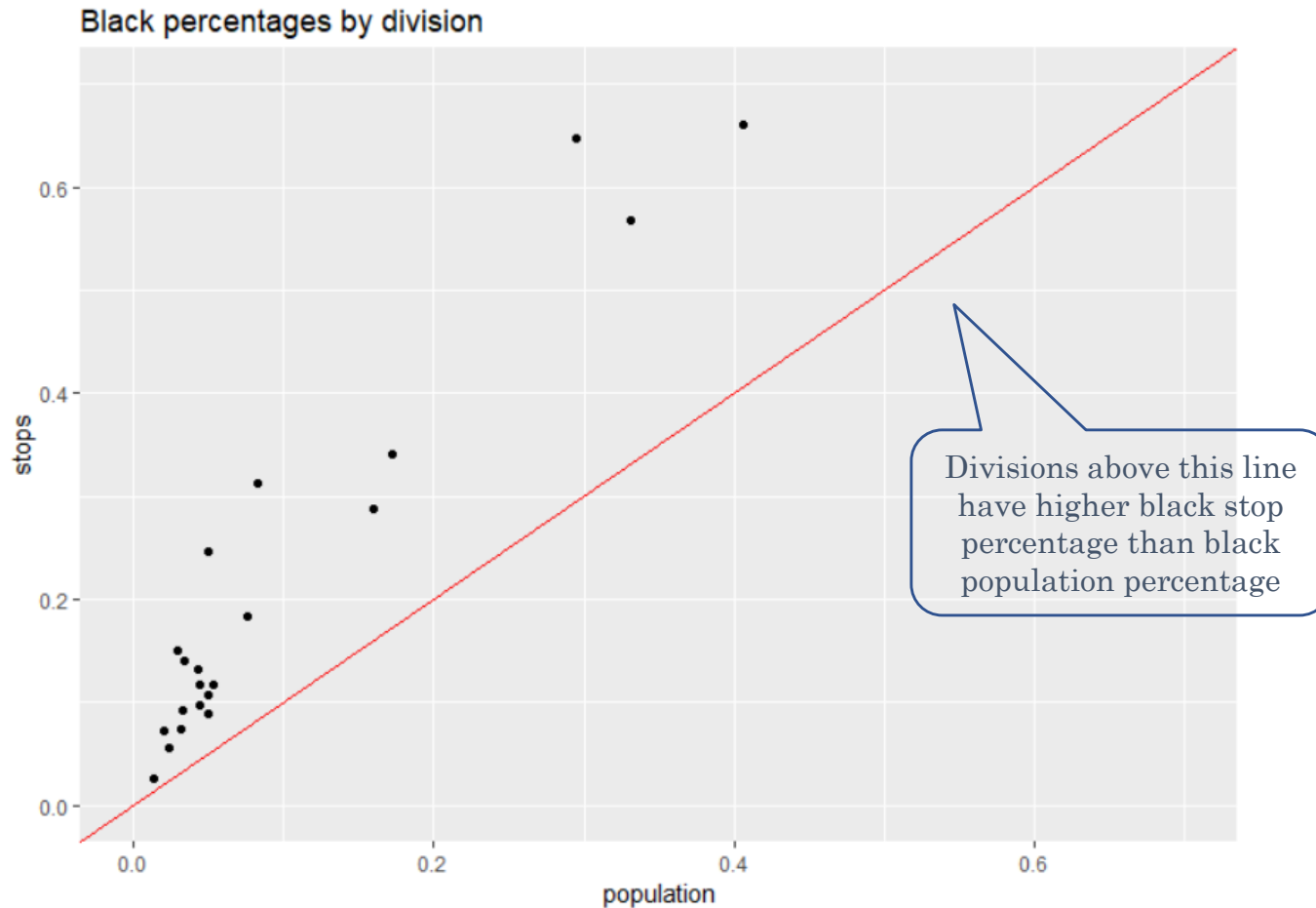- The percentage of black stops is increasing over time

# Trends in Black stops

Black percentages by divsion 2010

Black percentages by divsion 2018

division
- 77TH STREET
- CENTRAL
- DEVONSHIRE
- FOOTHILL
- HARBOR
- HOLLENBECK
- HOLLYWOOD
- MISSION
- NEWTON
- NORTH HOLLYWOOD
- NORTHEAST
- OLYMPIC
- PACIFIC
- RAMPART
- SOUTHEAST
- SOUTHWEST
- TOPANGA
- VAN NUYS
- WEST LOS ANGELES
- WEST VALLEY
- WILSHIRE

- The percentage of black stops is changing differently by division

- Divisions with a higher percentage of black population have decreasing percentages
  - Ex: 77th Street division
    - Black population: 41%
    - Black stops 2010: 69%
    - Black stops 2018: 64%

- Divisions with a lower percentage of black population an increasing percentage
  - Ex: Hollywood division
    - Black population: 5%
    - Black stops 2010: 22%
    - Black stops 2018: 34%

# Breakdown of black stops by division

Which divisions have a larger percentage of black stops than black population?



All of them

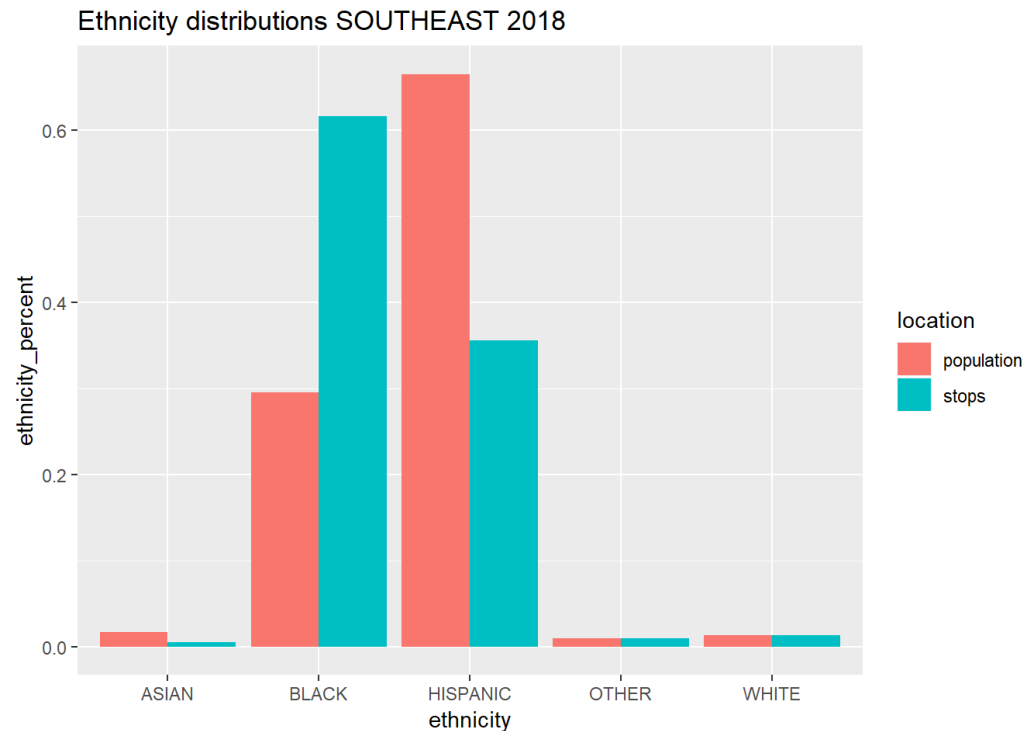# Identification of problem areas

# Methodology for identifying officers for anti-bias training

1. We're interested in current trends. Filter the data to 2018 only.

2. Identify divisions where the percentage of black stops or the number of black stops is higher than expected

3. Look at the officers performing stops.
   1. Filter to one division at a time.
   2. Filter to officers who performed at least 100 stops in that division in 2018.
   3. Plot a histogram of those officers with black stop percentage on the x-axis
   4. Identify officers with a large black stop percentage relative to others in their division.
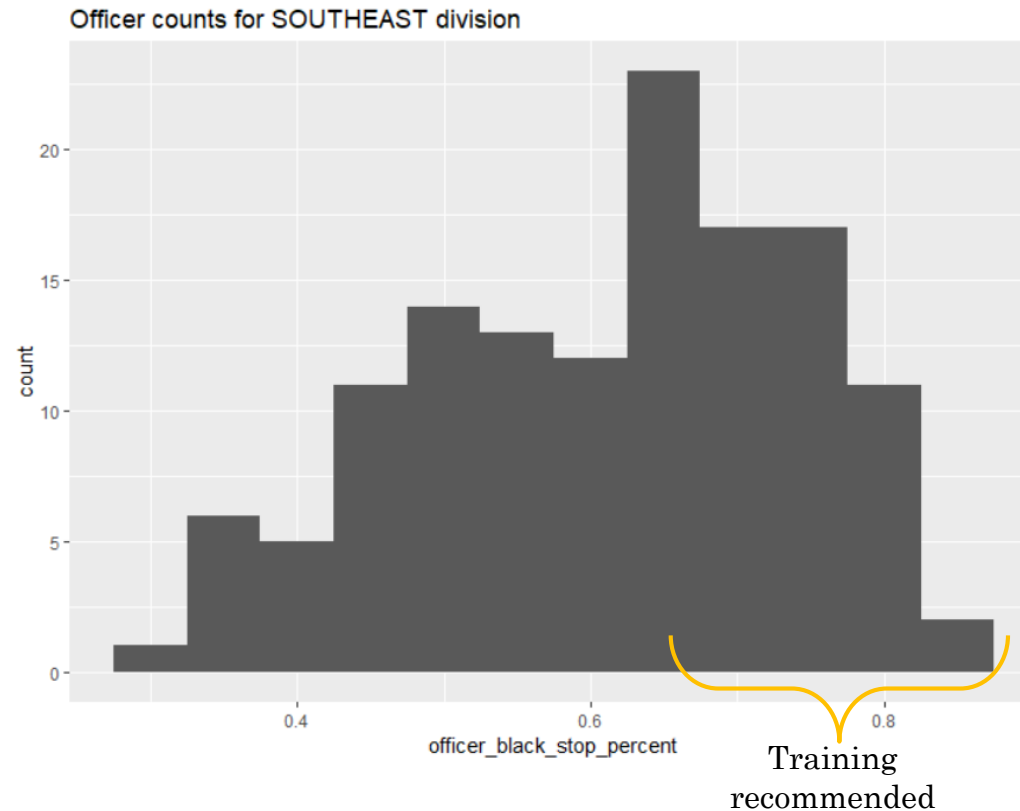
# Problem divisions



Black percentages by division 2018



Black counts by division 2018
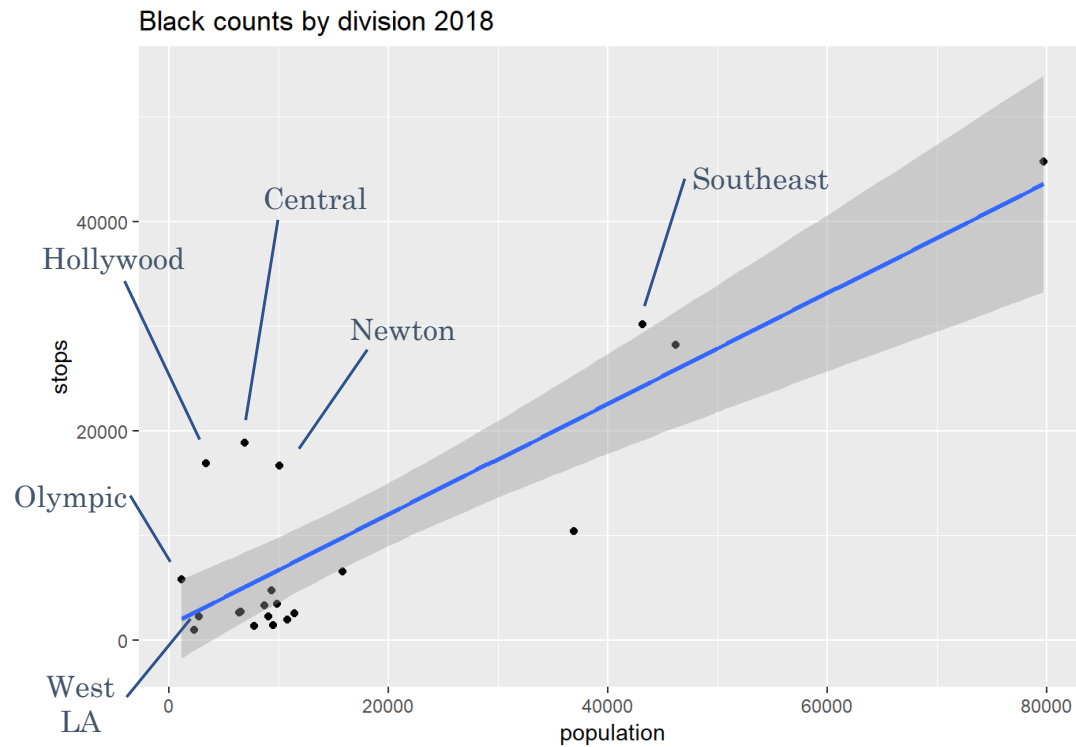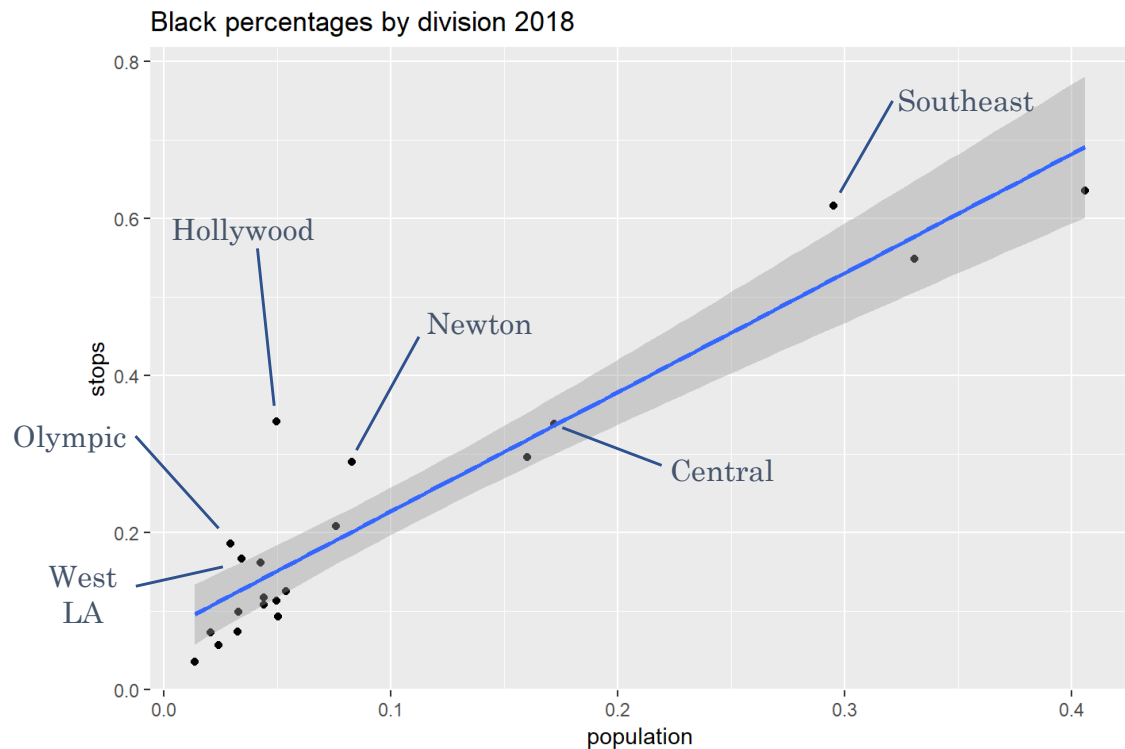
# Southeast division officers

Ethnicity distributions SOUTHEAST 2018

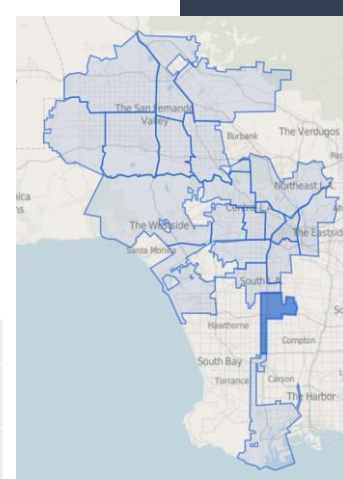Officer counts for SOUTHEAST division

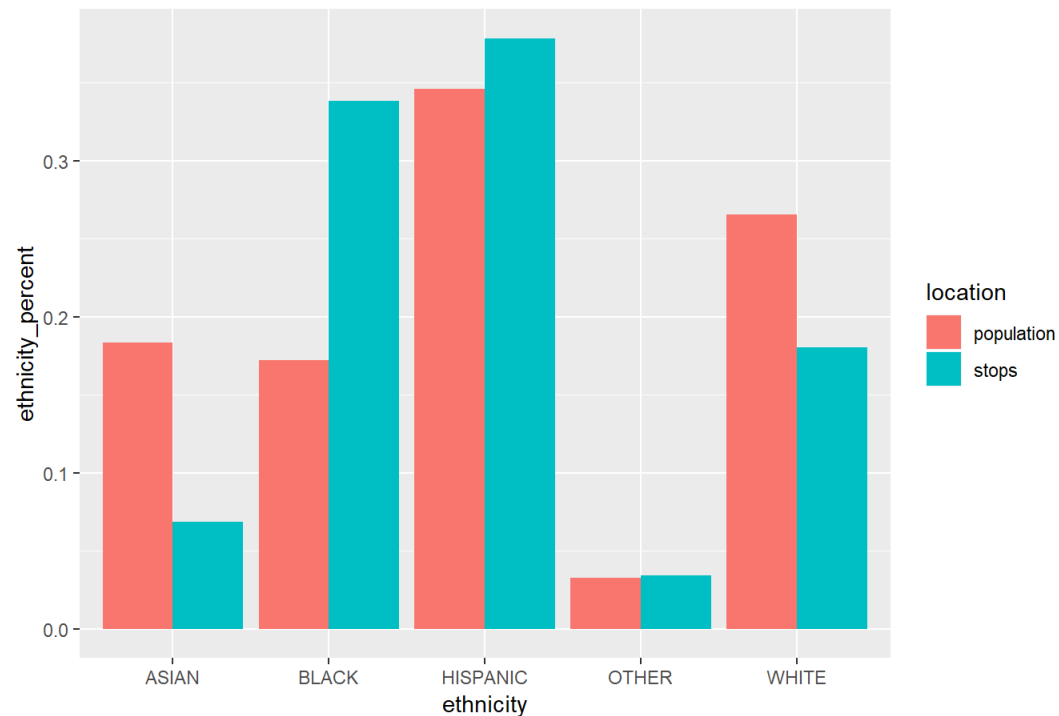Training recommended

Black population: 30%
Black stop percentage: 62%

Recommendation:
Provide anti-bias training to the 70 officers with 100 or more total stops and have black stop percentage higher than 62.5%

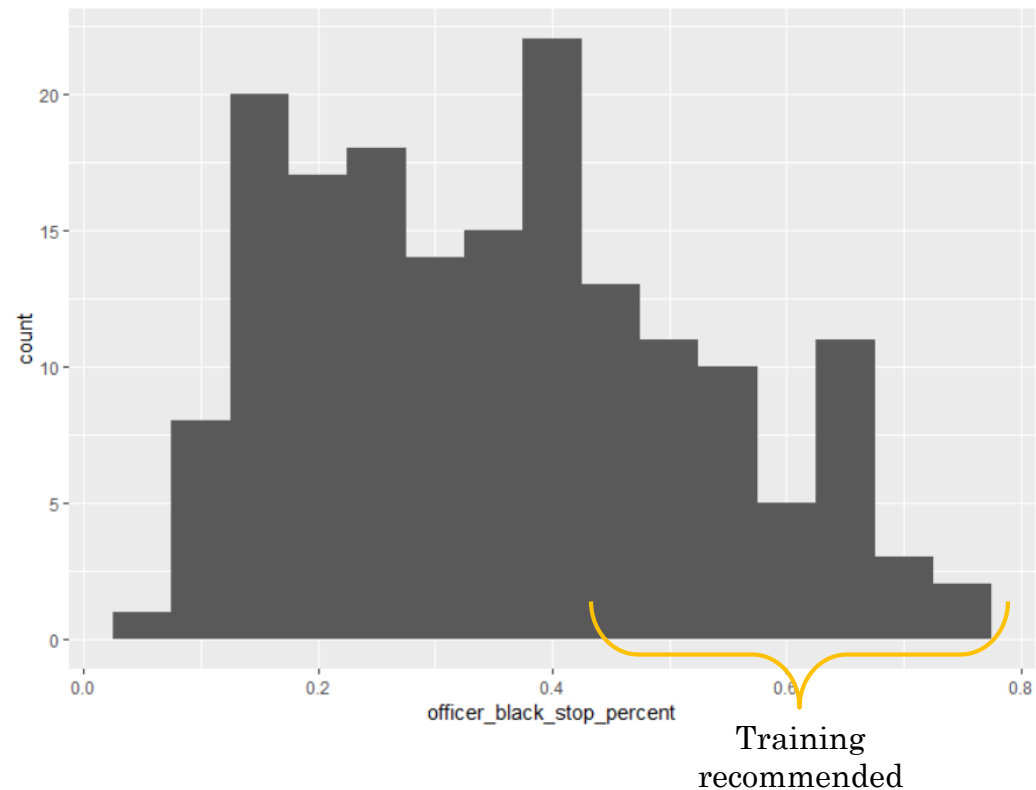*Note: only officers with 100 or more stops in 2018 are included*

# Central division officers



Ethnicity distributions CENTRAL 2018
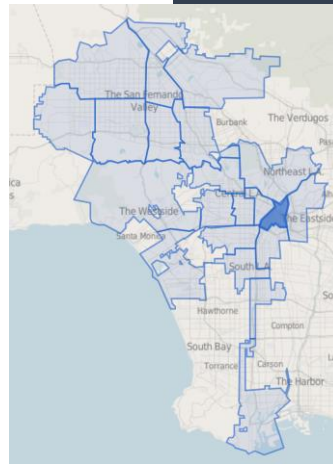


Officer counts for CENTRAL division

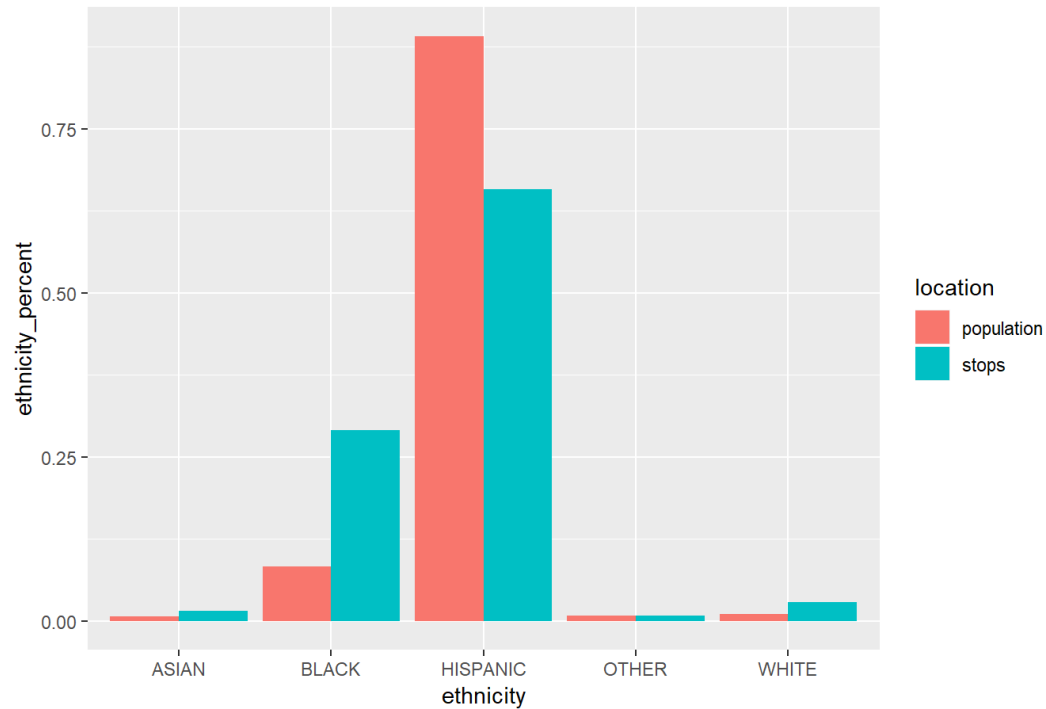Training recommended

Black population: 17%
Black stop percentage: 34%

Recommendation:
Provide anti-bias training to the 55 officers with 100 or more total stops and have black stop percentage higher than 42.5%
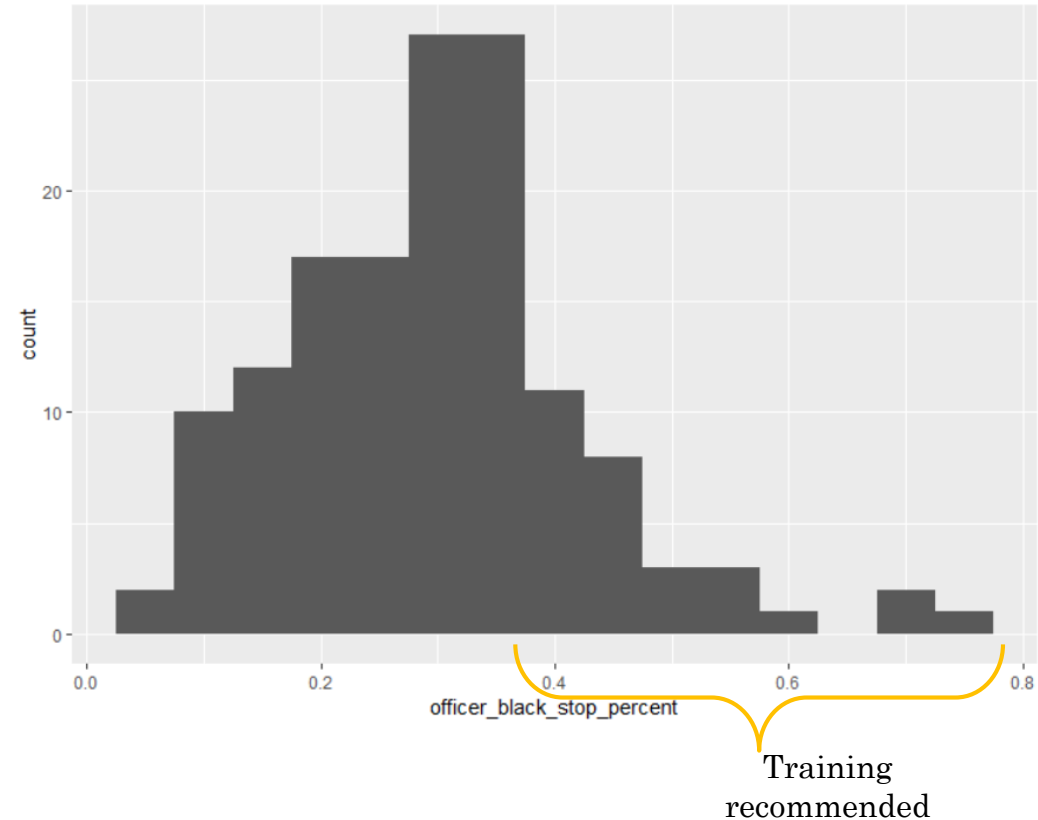
*Note: only officers with 100 or more stops in 2018 are included*

# Newton division officers

### Ethnicity distributions NEWTON 2018



Black population: 8%
Black stop percentage: 29%
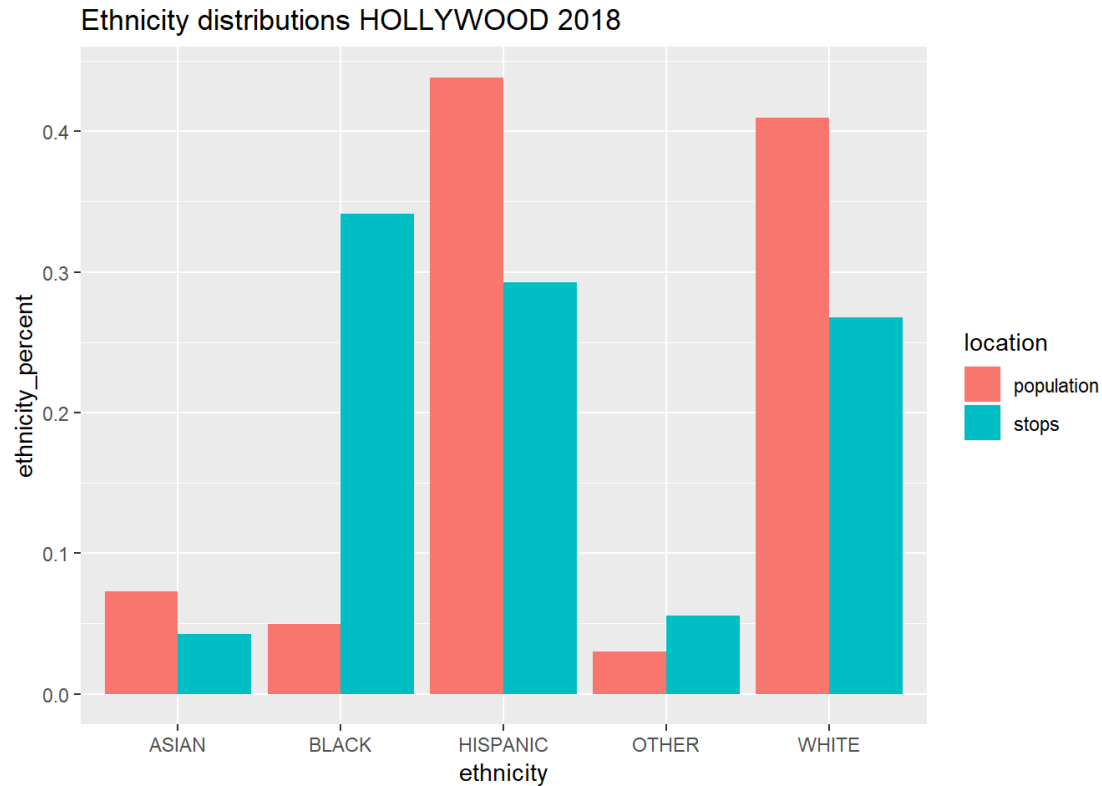
### Officer counts for NEWTON division



Training recommended

Recommendation:
Provide anti-bias training to the 56 officers with 100 or more total stops and have black stop percentage higher than 32.5%

*Note: only officers with 100 or more stops in 2018 are included*
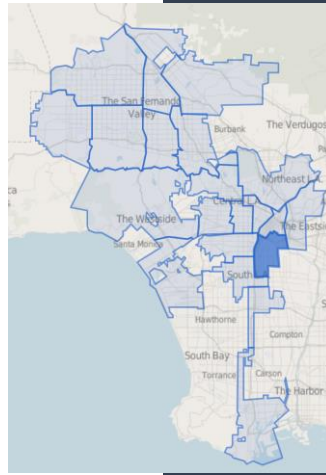
# Hollywood division officers



Ethnicity distributions HOLLYWOOD 2018

Black population: 5%
Black stop percentage: 34%



Officer counts for HOLLYWOOD division

Training recommended

Recommendation:
Provide anti-bias training to the 68 officers with 100 or more total stops and have black stop percentage higher than 37.5%
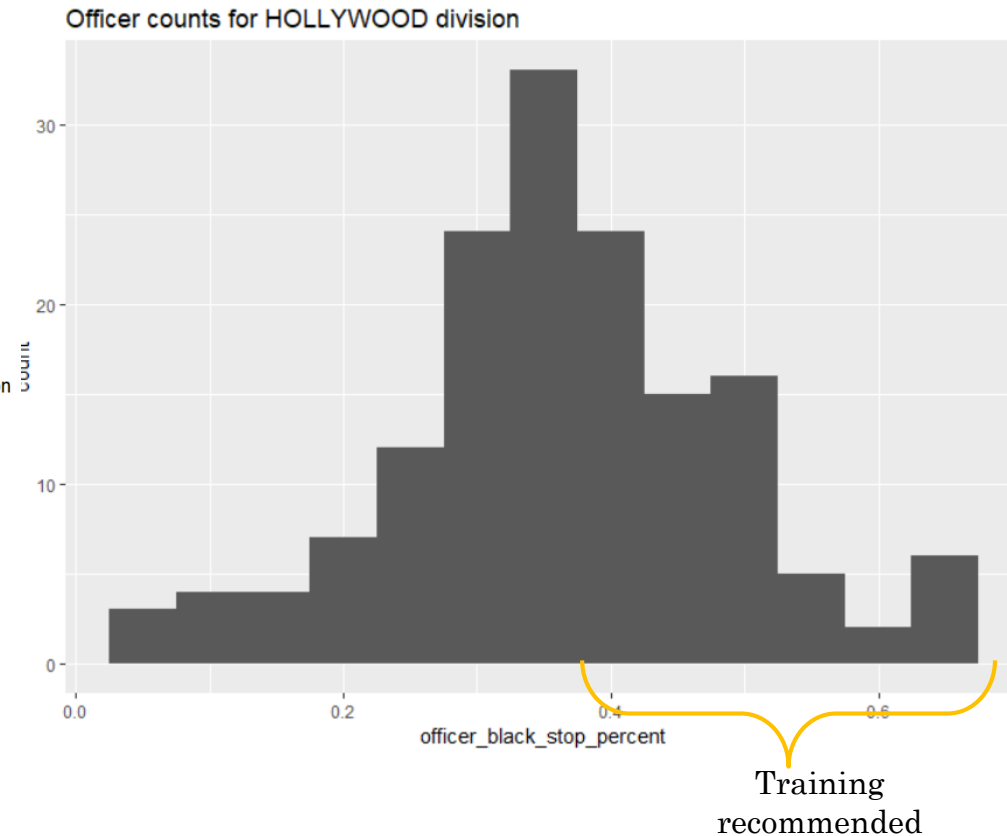
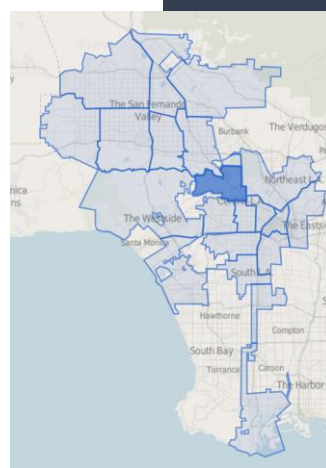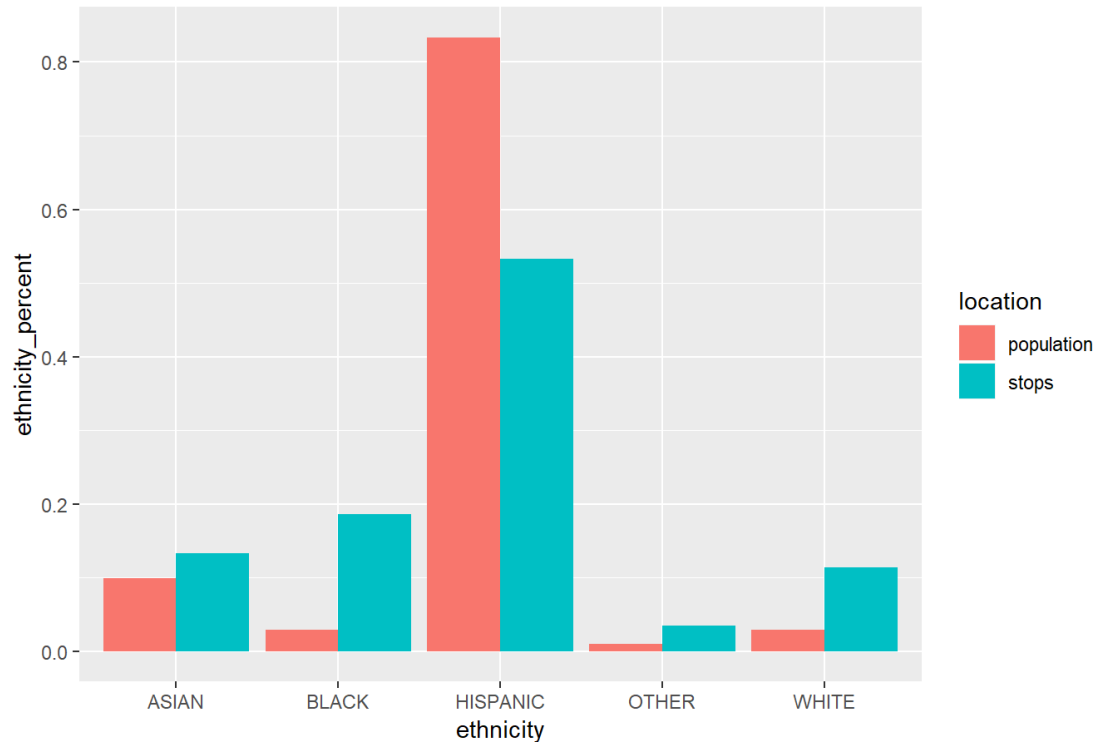*Note: only officers with 100 or more stops in 2018 are included*
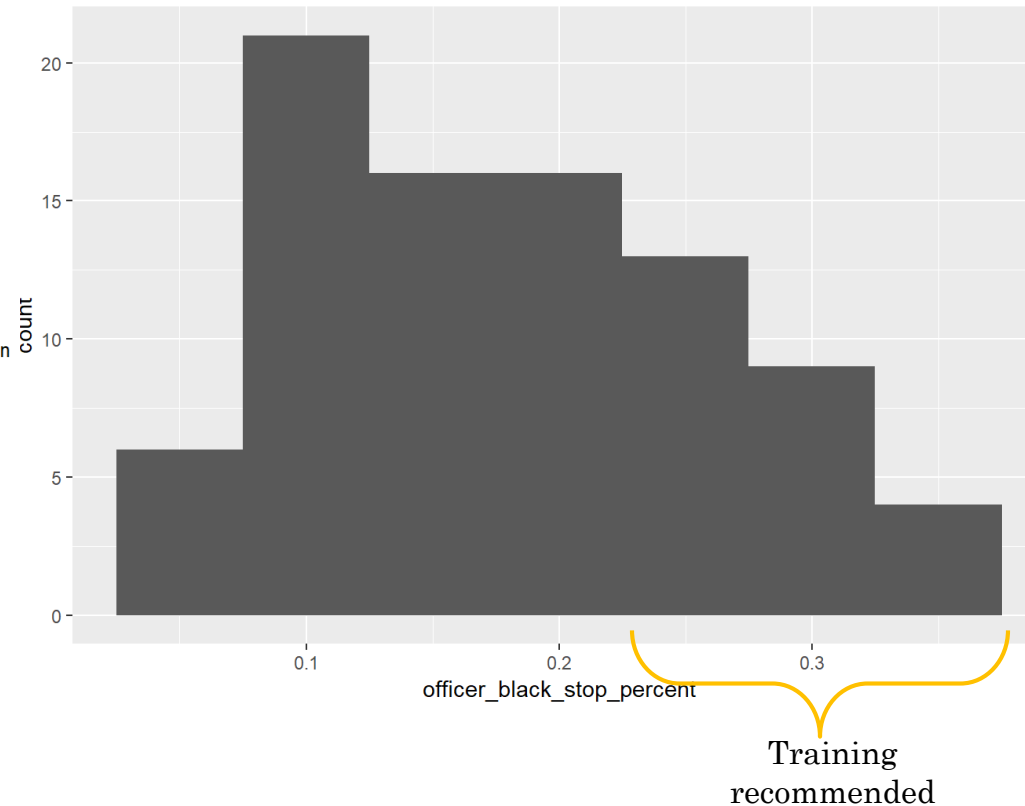
# Olympic division officers

### Ethnicity distributions OLYMPIC 2018
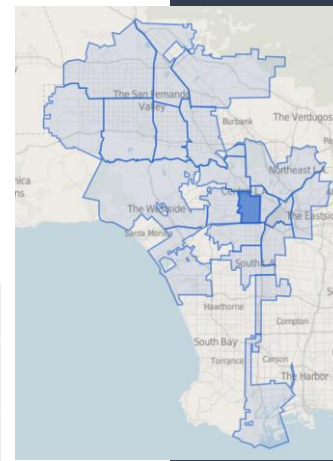


Black population: 3%
Black stop percentage: 19%

### Officer counts for OLYMPIC division



Training recommended

Recommendation:
Provide anti-bias training to the 26 officers with 100 or more total stops and have black stop percentage higher than 22.5%

*Note: only officers with 100 or more stops in 2018 are included*

# West Los Angeles division officers

### Ethnicity distributions WEST LOS ANGELES 2018



Black population: 3%
Black stop percentage: 16%

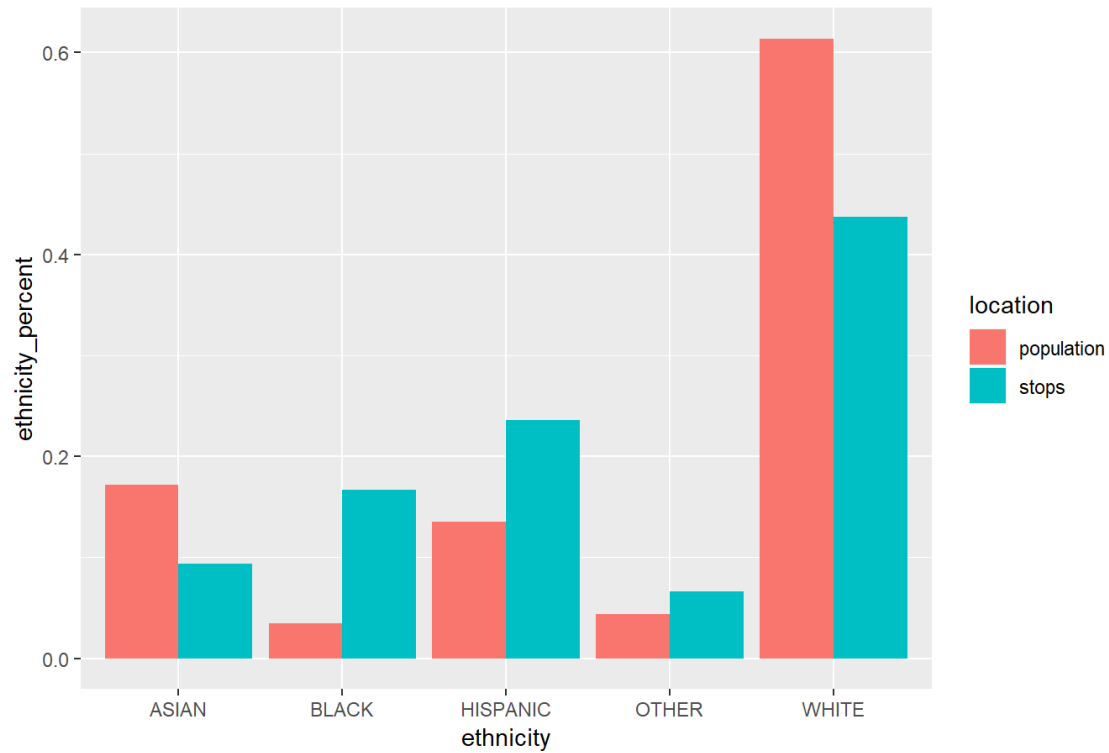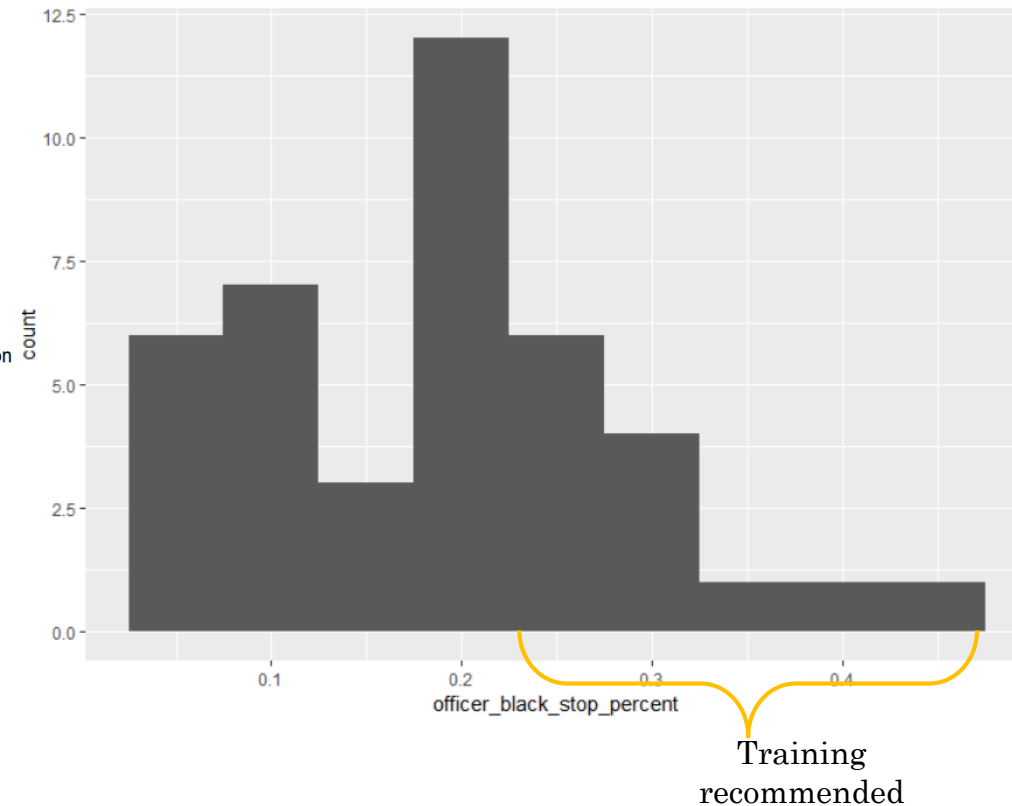### Officer counts for WEST LOS ANGELES division



Training recommended

Recommendation:
Provide anti-bias training to the 13 officers with 100 or more total stops and have black stop percentage higher than 22.5%

*Note: only officers with 100 or more stops in 2018 are included*
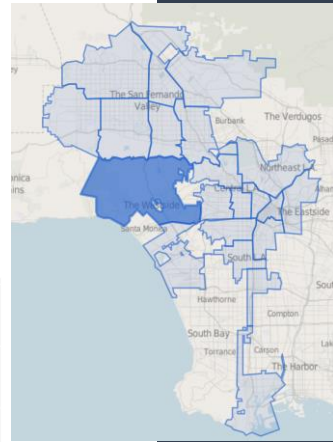
# Conclusions & Recommendations

# Recommendations

- Of the 5,208 officers who made Los Angeles traffic stops in 2018, we've recommended 284 for anti-bias training

- Four of the identified officers appear in the list for more than one division. These officers should be considered for extra training.

# Follow up ideas

- Are officers from particular divisions more likely to be involved in black stops? Do officers from traffic divisions differ from other officers assigned to other divisions?

- If a secondary officer is involved in a traffic stop, does that change the data?

- Investigate relationship between crime rates and traffic stops.

- Drill into the location data. Are there specific basic car units or reporting districts with very high stops? Are these linked to crime rates?

- Investigate relationship between poverty rates and traffic stops.