

ACLU Police Budget Project

Team:

Mohan Sai Krishna Thota

Ajit Balla

Anran Du

Srinivas Chellaboina

Jasmine Fanchu Zhou (Project Manager)

Yagev (Technical Engineer)

Project Introduction

Project Overview

Regular part:

- Visualize and analyze previous BPD budgets and police officers' earnings (according to time and categories)
- Improve the code of the previous visualization section to make the visualization part more accurate and informative

Extension part:

- Based on the new budget data released in April 2023, update visualization part and give corresponding analysis to advocate for future budget allocations during the Spring budget negotiations with the Mayor and the Boston Police.
- Racial comparisons of BPD officials from 2020 to 2022 were visualized to determine whether BPD was racially discriminatory in recent years.

Datasets and Data Collection Methods

Datasets:

- 1.(FY16-23) [Operating Budget - Datasets - Analyze Boston](#)
- 2.[Employee Earnings Report - Datasets - Analyze Boston](#)
3. [Roster](#) (list of active officers)
4. Number of police officers: <https://cde.ucr.cjis.gov/LATEST/webapp/#>
- 5.BPD previous years budget: <https://www.boston.gov/departments/budget#current-and-past-fiscal-year-budgets>
6. The Mayor's recommended FY24 operating budget:
<https://data.boston.gov/dataset/operating-budget/resource/8f2971f0-7a0d-401d-8376-0289e3b810ba>

Data Collection Methods:

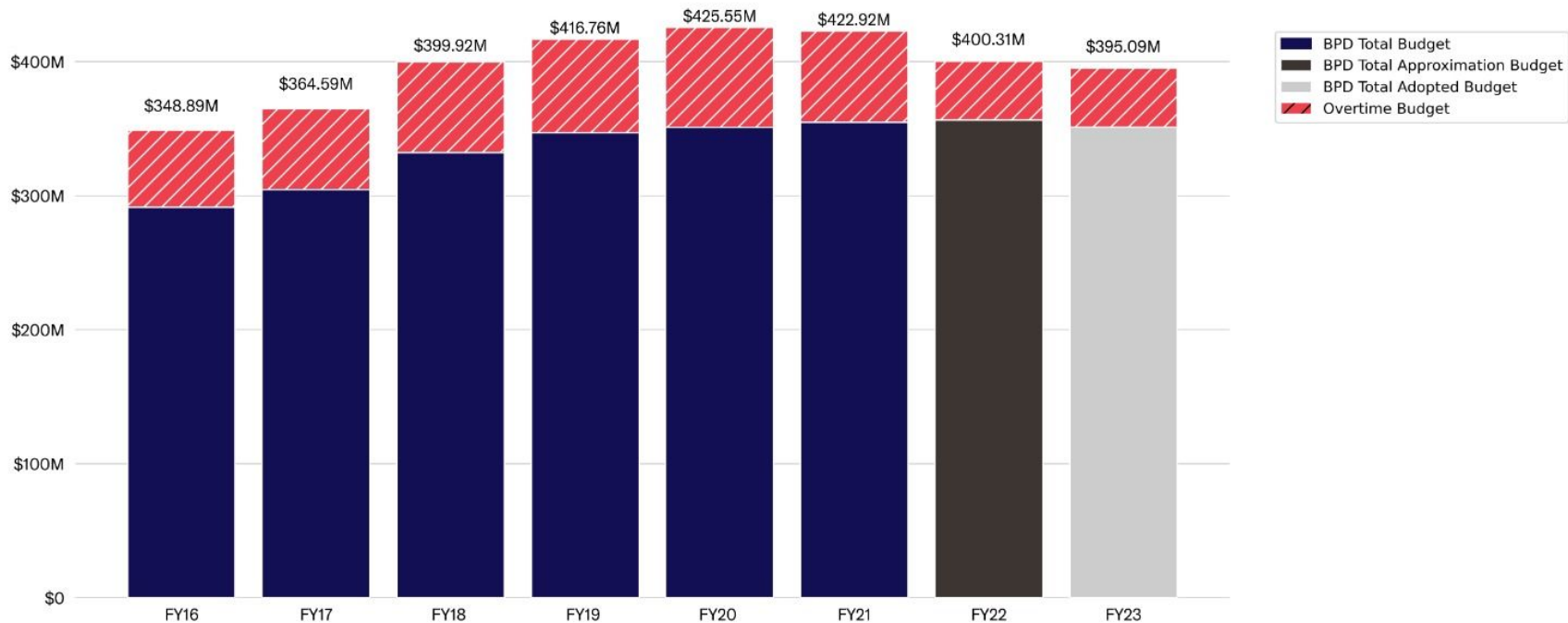
For the data that cannot be found through the first three datasets, we search for the database mentioned in the report of the previous group, and then search through the Boston government report

Base Project

Visualizations and Results

The overall budget of the BPD from FY16-FY23

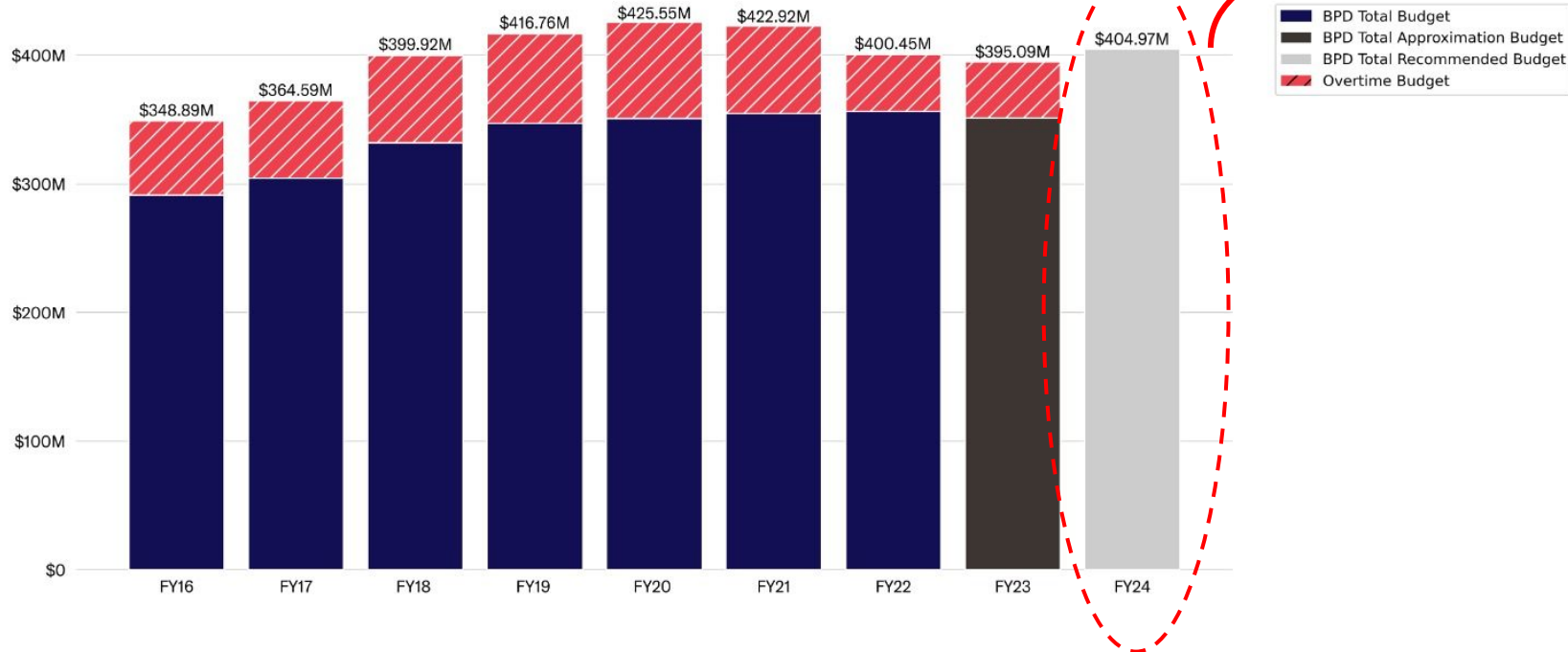
From 2020 to 2023, the BDP's overall budget and overtime budget are declining



This chart shows a year-over-year budget comparison of the Boston Police Department from 2016 to 2023. The trend shows that the overall decline rate of BPD budget is relatively slow, indicating that the government still needs to strengthen control.

BPD's recommended budget rebound in FY24

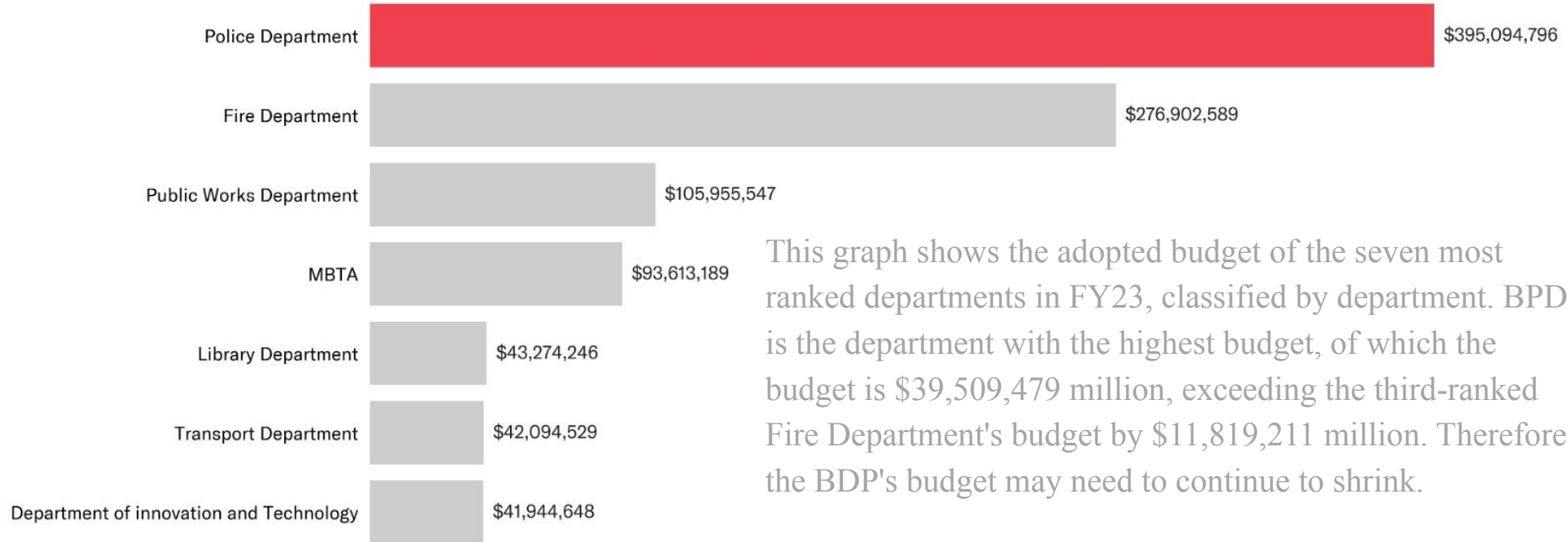
BDP's total recommended budget in FY24 increase for the first time after three years of budget cuts.



BDP's total recommended budget in FY24 is roughly \$9 million higher than last year's budget. Comparing with previous years this year's budget is the first increase after three years of budget cuts.

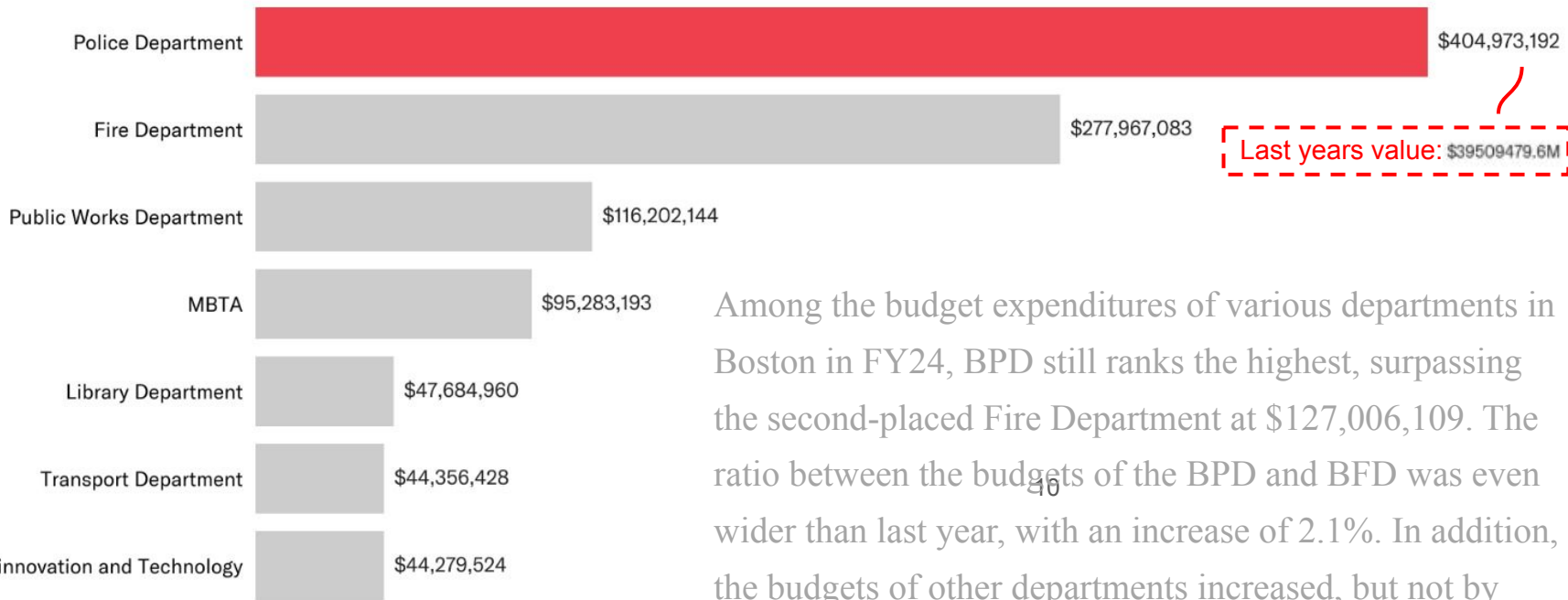
The adopted budget of BPD

Boston Police Department has the largest adopted budget out of all departments excluding BPS



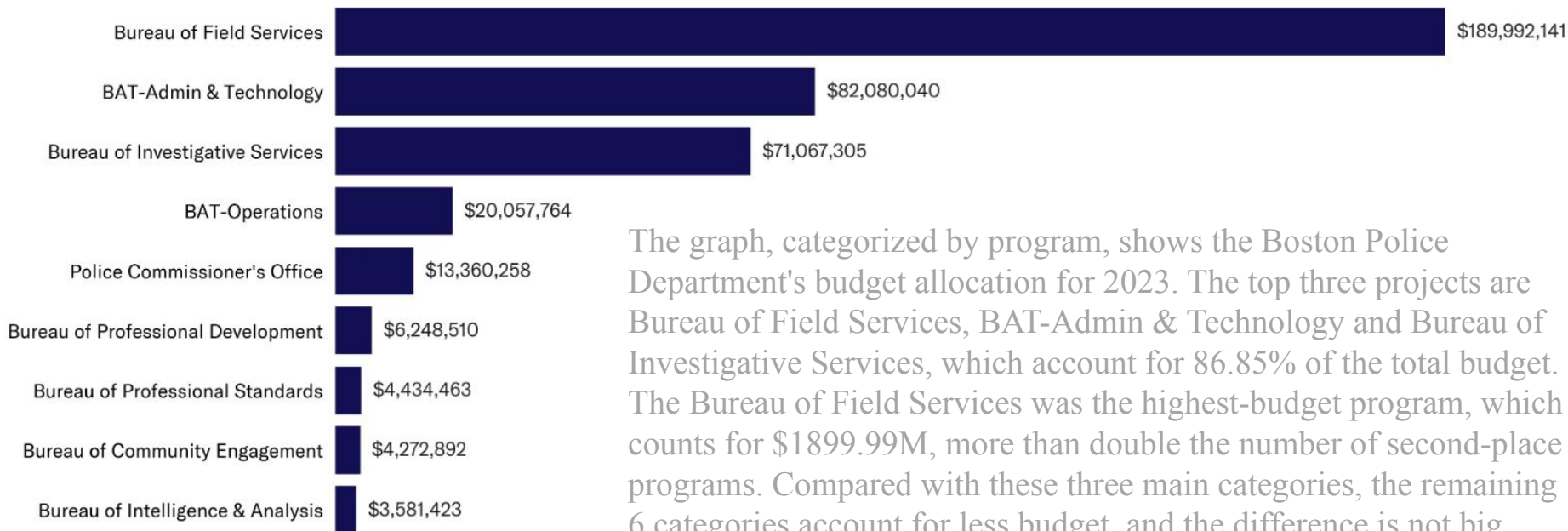
This graph shows the adopted budget of the seven most ranked departments in FY23, classified by department. BPD is the department with the highest budget, of which the budget is \$39,509,479 million, exceeding the third-ranked Fire Department's budget by \$11,819,211 million. Therefore, the BDP's budget may need to continue to shrink.

Boston Police Department has the largest adopted budget out of all departments in FY24

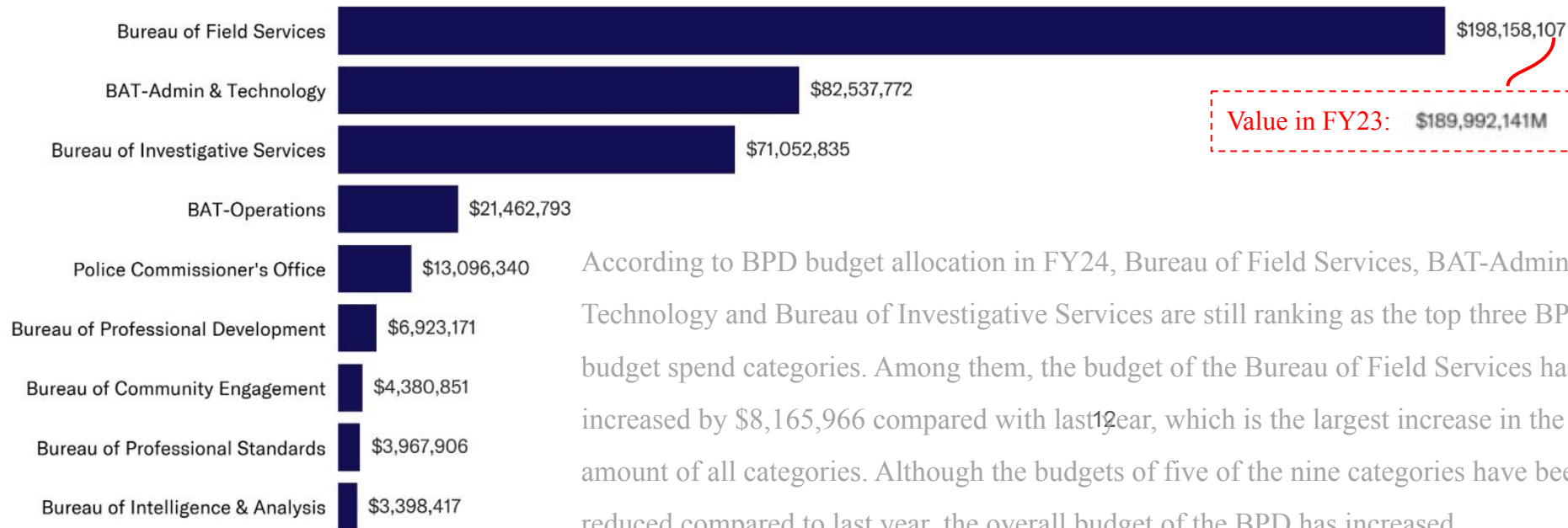


BPD Budget Spend Categories

Bureau of Field Services is the program with the highest total budget in FY23, twice as much as the second place.



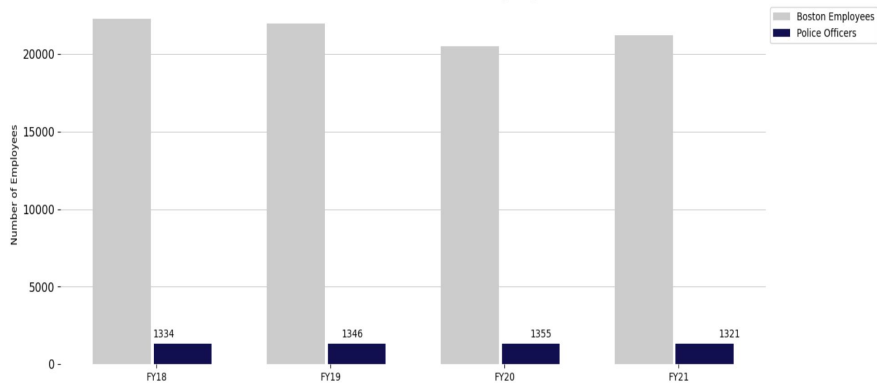
The Bureau of Field Services is still the program with the largest total budget in 2024, with a larger budget than last year.



According to BPD budget allocation in FY24, Bureau of Field Services, BAT-Admin & Technology and Bureau of Investigative Services are still ranking as the top three BPD budget spend categories. Among them, the budget of the Bureau of Field Services has increased by \$8,165,966 compared with last year, which is the largest increase in the amount of all categories. Although the budgets of five of the nine categories have been reduced compared to last year, the overall budget of the BPD has increased significantly compared to the previous year due to the excessive increase in the budgets of other four categories.

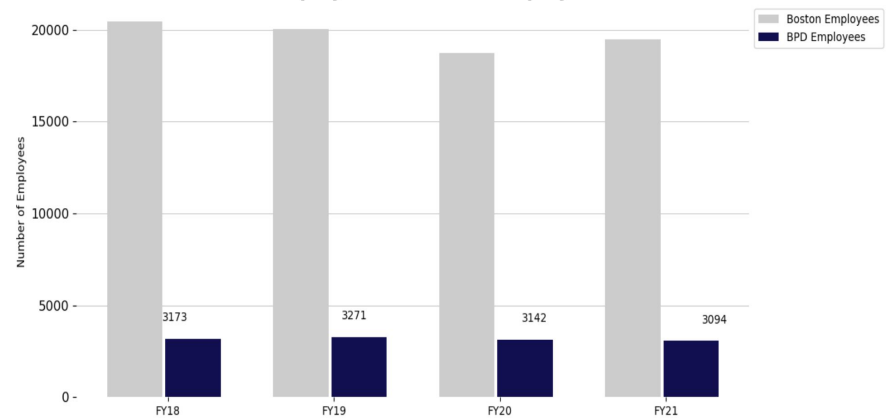
The number of police officers did not fluctuate significantly from 2018 to 2021

Police officers VS Boston Employees



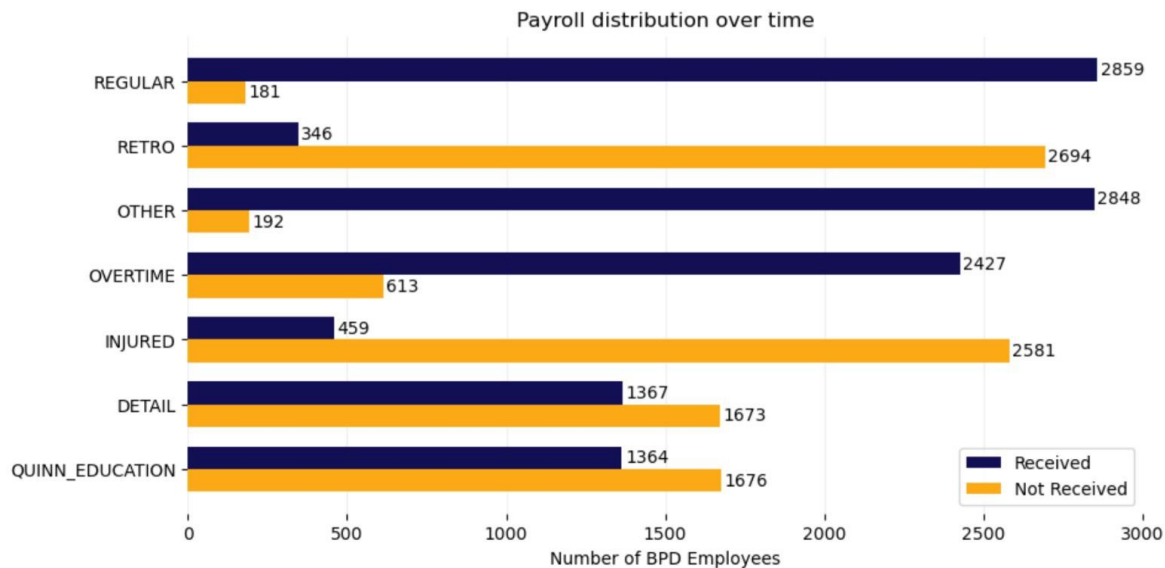
The left graph shows a year-over-year comparison of the number of police officers in Boston with the number of other types of employees. From 2018 to 2021, the number of police officers did not fluctuate significantly, remaining between 5.65% and 6.2% of the total employment population, which is 6%-6.6% of the number of other Boston employment groups.

BPD Employees VS Boston Employees



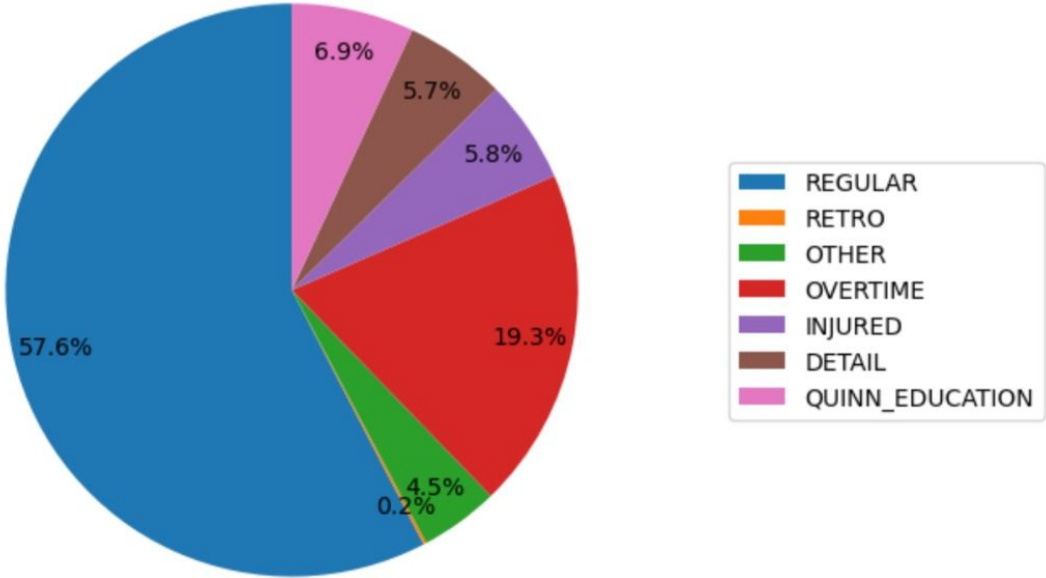
The right graph shows the year-by-year comparison between the total number of employees in Boston and the total number of BPD Employees. From 2018-2021, although the number of BPD employees has shown a downward trend from the overall data, the proportion of this group in the number of employed people in Boston has remained basically unchanged.

Number of police officers Received vs Not Received.



This graph shows how Boston police officers are paid in seven major income categories by comparing those who are paid with those who are not. We can conclude that the main income of the vast majority of Boston policers is obtained from OVERTIME payments, REGULAR payments and OTHER payments such as bonus incentive earnings, grievances and etc.. Therefore, getting wages through overtime working is an important way for them to get wages.

Payroll distribution over time (base, overtime, retro, detail, etc.)

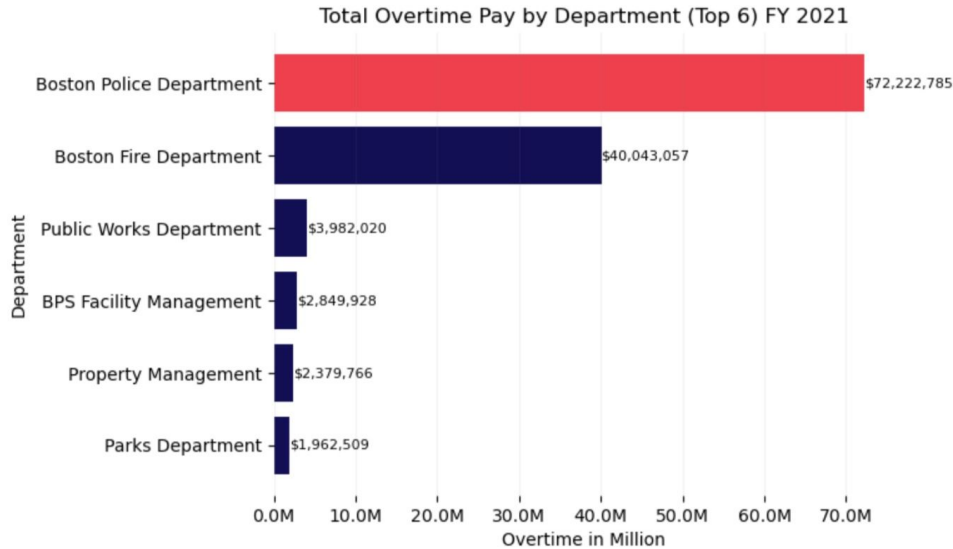


This pie chart shows the payroll distribution of Boston Police Officers in 2022.

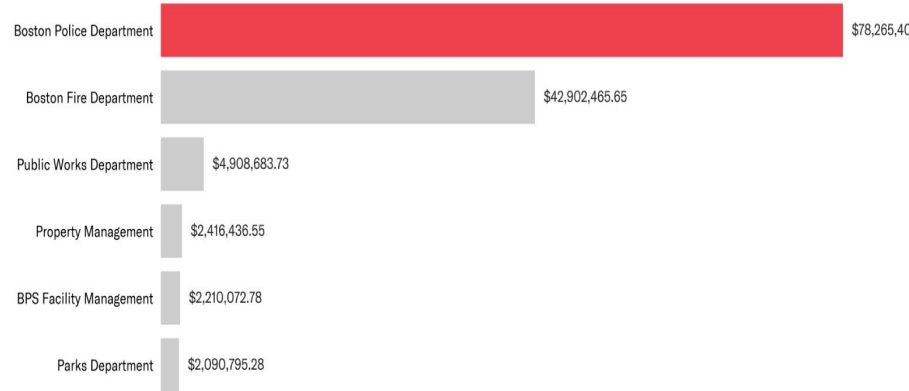
The income distributions that account for the most officers' income are regular pay and overtime pay, which accounted for 76.9% of the overall income.

While the rest of the payroll distribution had little impact on the overall income.

BPD ranks highest among six top departments for total overtime pay.

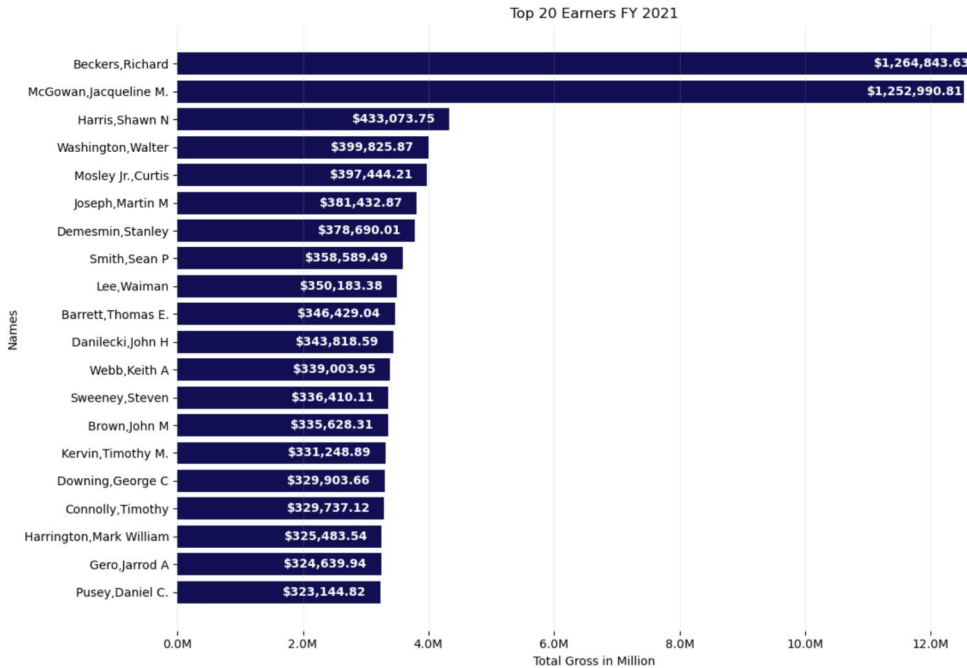


The total overtime pay of Boston Police Department ranked Highest in FY22, 1.8 times that of BFD

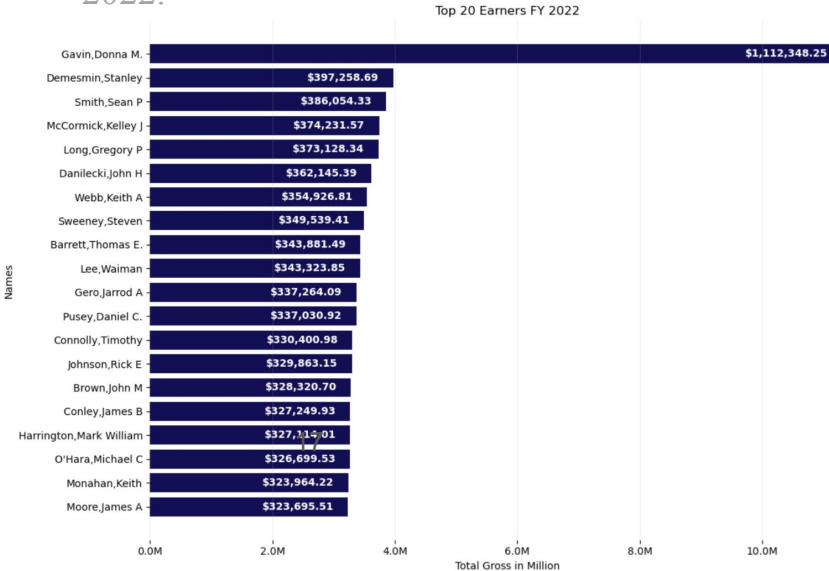


These two graphs are classified by department, showing the top 6 departments in Boston in the category of overtime pay in 2021 and 2022. In these two years, the overtime pay of the Boston Police Department has been ranked first and far exceeded the second place Boston Fire Department for at least 30 Million dollars. In addition, although the total overtime pay rankings of other departments have changed in the past two years, they are generally similar, concentrated between 0.4Million and 0.2Million dollars. The average overtime pay of these sectors in 2022 is about 3.7% of the BPD OH pay.

The earning range of most top 20 earners remains unchanged from 2021 to 2022



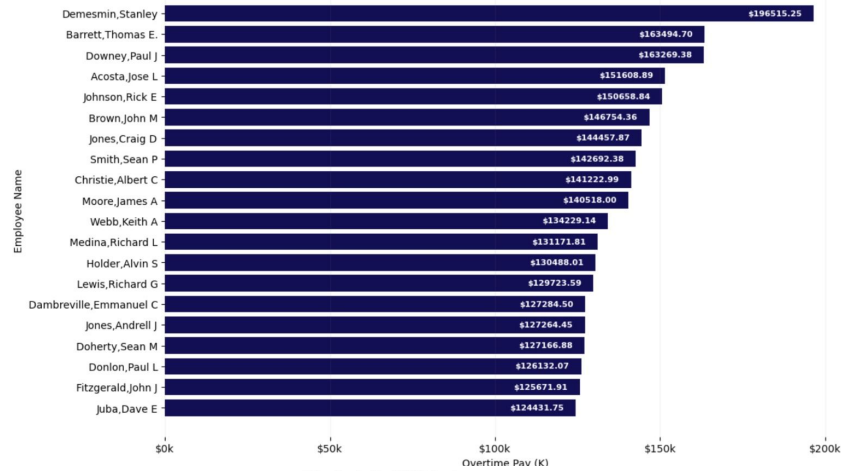
These two graphs show the top twenty officers with the highest total gross salary for 2021 and 2022.



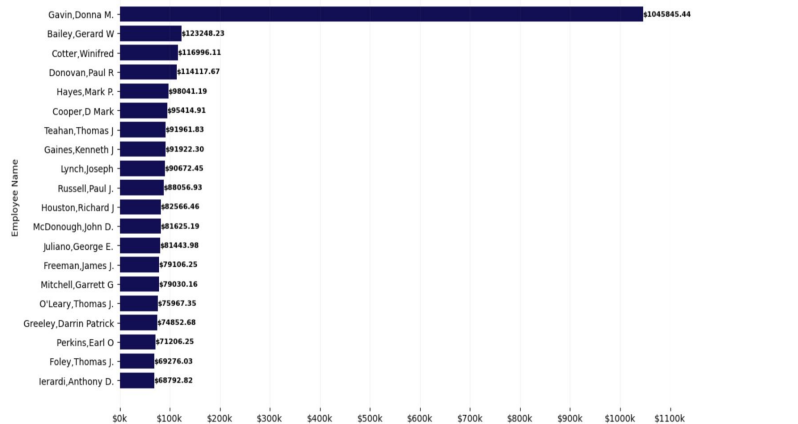
Conclusion: Although the top 20 officers have changed in 2021 and 2022, except for the top two employees, the salary levels of the rest of the employees are not much different.

Top 20 Earners (OT, Base, Other)

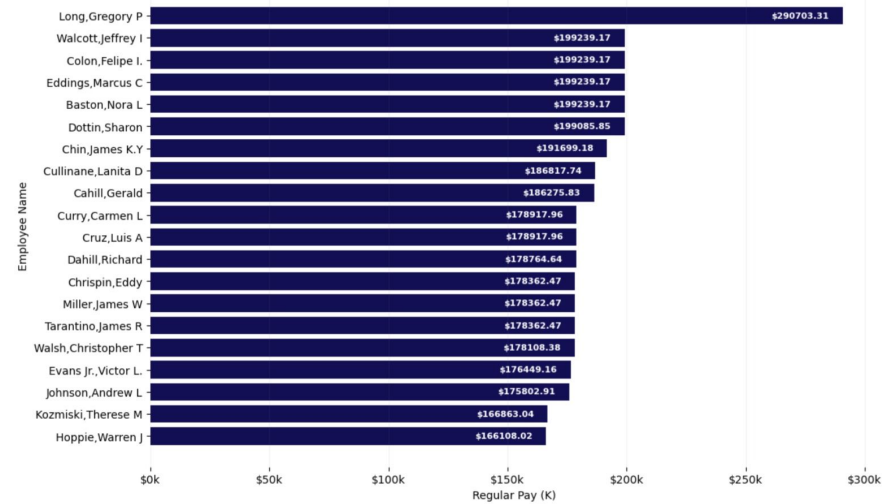
Overtime Pay for Top 20 BPD Employees



Other Pay for Top 20 BPD Employees



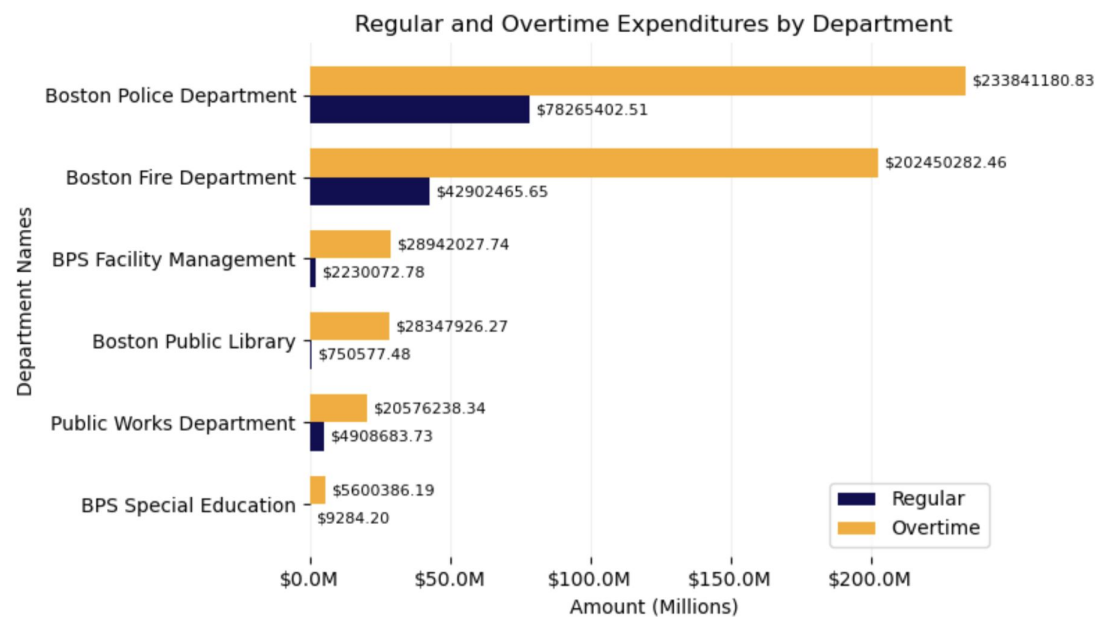
Regular Pay for Top 20 BPD Employees



The above three graphs show the Top 20 Earners in the three categories of OT, Base and Other pay. According to the finding, the high basic salary and overtime pay is the main reason for the high income of high-income groups.

In addition, except for those who rank the highest in each category, there is not much difference in the income of the other officers in the two categories of regular and other pay. While, the overtime category shows a clear decline, with a difference of \$40,000 between the second and 20th ranks.

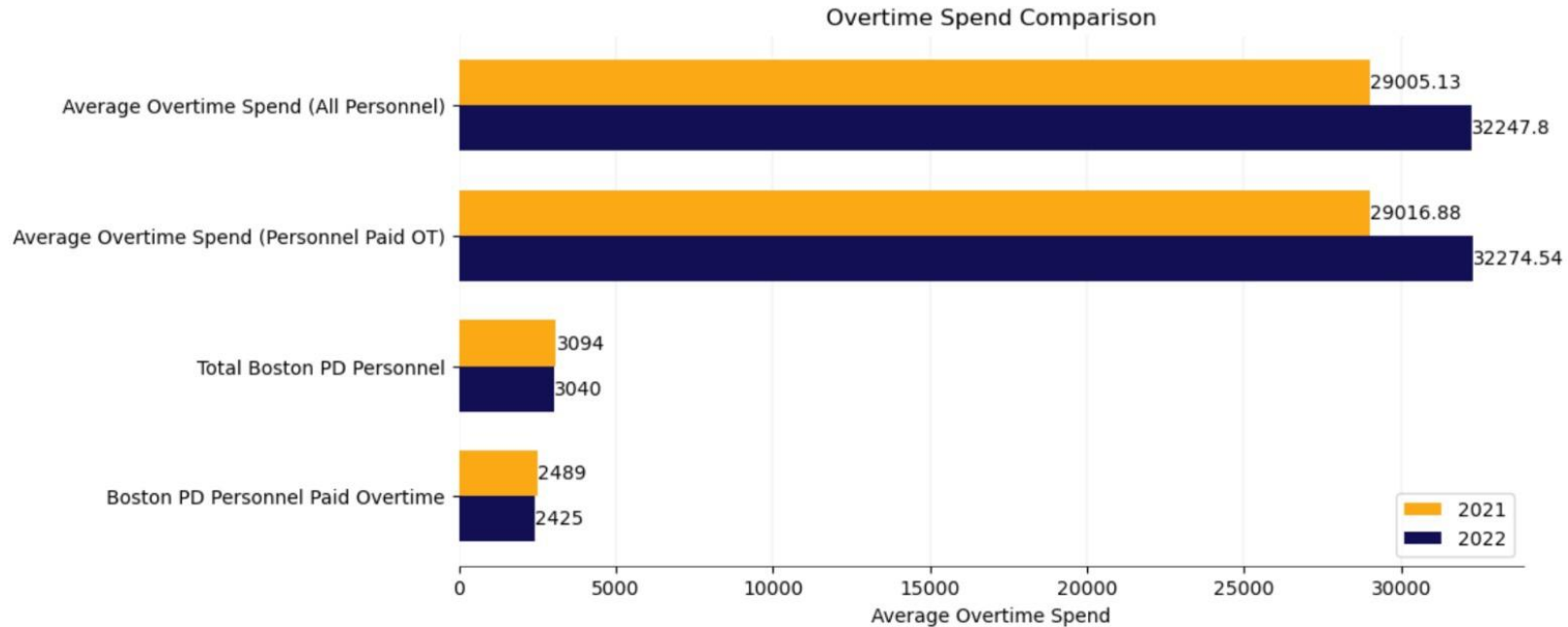
High level overtime analysis (base salary vs. overtime vs. other departments)



This graph is classified by sectors and analyzes the expenditures of each sector on regular salary and overtime salary in 2022.

Conclusion: BPD spends too much on Regular and Overtime spending, which needs to be adjusted.

Number of employees vs. OT spend



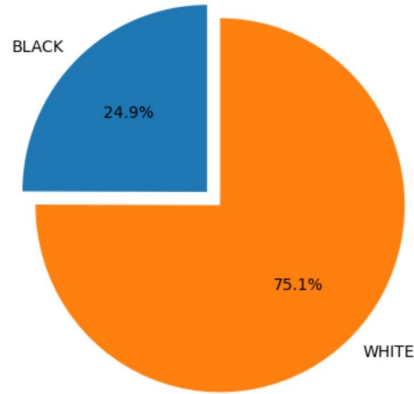
This graph illustrates the overtime spending comparison in 2021 and 2022. The number of both Total Boston PD Personnel and Boston PD Personnel Paid overtime are decreased. However, the average overtime spend of All Personnel and Personnel Paid Overtime increased. This difference implies that the Overtime Spending of both categories did not decrease in 2022.

Extension Project

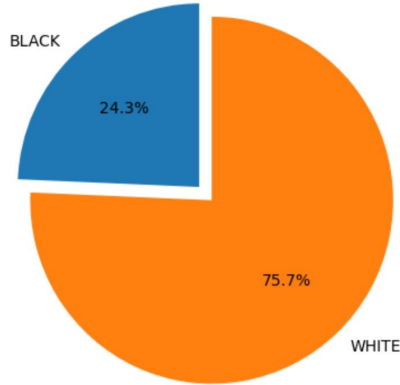
Visualizations and Results

Racial Comparison

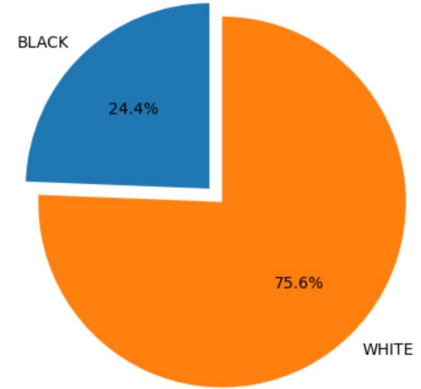
Black vs White Ethnic Group Distribution in Police Data FY 20



Black vs White Ethnic Group Distribution in Police Data FY 21



Black vs White Ethnic Group Distribution in Police Data FY 22



According to the racial comparison graph of the BPD police from 2020 to 2022, it can be seen that the number of black people accounted for about 32% of the number of white people on average during these three years. Although the number of police officers in both classifications shows a year-on-year downward trend, in 2021, the number of blacks will decrease by 4.5% compared with the previous year (2020), and the number of whites will decrease by 1.3%; in 2022, the number of blacks will decrease compared with the previous year 0.8%, and whites dropped 1.1%. It can be seen that the number of races within the BPD is not evenly distributed, and whites have a higher chance of serving as police officers. At the same time, judging from the three-year decline in the number of police officers, blacks have a higher probability of leaving (or retiring) than whites.

Conclusion

1. BPD's budget is relatively high compared to other departments in Boston, and it has continued to rise this year.
2. For BPD officers, the main income of the vast majority of them is obtained from OVERTIME payments, REGULAR payments and OTHER payments. In the income ranking of officers, other payment accounts for a large part of the salary slips of the top officers, but the specific content of this part of the salary is not transparent.
3. The overall overtime payment of BPD is much higher than that of other departments, and spends too much on Regular and Overtime payment, which needs to be adjusted.
4. There is racial discrimination in the distribution of police officers in BPD. The annual average only accounts for about 32% of the white race.

Limitation

- Since our data set involves the position, salary level and salary classification of each BPD official, there is much missing data in this statistical process. Therefore, in our analysis process, we discarded official information with too many null values, which may lead to biased analysis.
- In addition, when conducting total budget research over the years, for the reason of missing data (proposed budget), we analyzed the data of appropriation budget, adopted budget and expense instead of analyzing the relationship of proposed budget and adopted budget. After comparing the data of , we believe that the definitions of the two are consistent.

Thanks for your time!