WORKFORCE COST OPTIMIZATION

CITY OF HAYWARD

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The Problem

The City of Hayward is overspending on Overtime Budget

Since last 3 years

287%

of the allocated OT budget in FY 2025

This project analyzes Vacancies and Overtime data to uncover the roles contributing most to OT costs, its fiscal impact, and recommend staffing strategies to better align resources with budget constraints

Dataset Overview

Dataset source: City of Hayward Finance and HR Team
Dataset Format: Excel spreadsheet with multiple sheets covering different budget and workforce dimensions
Tabs included:

Projected Pension	• 1,290 rows and 14 columns • Contains position-level data, including their salary, FTE, and projected CalPERS retirement costs for FY 2025–26. • Supports long-term pension liability forecasting.
OT Budget	• 460 rows and 13 columns includes department-level overtime budget data, with account codes, descriptions, and financial tracking fields (budget, encumbrances, and remaining balance) • Used to assess budget utilization and identify overspending on overtime
OT by Roles	• 152 rows and 112 columns includes detailed role-level metadata on overtime eligibility, pay types, bargaining units, schedules, and compensation structure • Helped highlight high-OT roles with no posted vacancies , revealing hidden staffing gaps
Overtime Data	• 19,722 overtime entries linked to employee IDs, job roles, and department accounts. • Key dataset that linked OT pay to job classes via employee numbers — enabled us to estimate OT costs per role despite not having role-level totals directly
Workforce Data	• 1,015 records and 30 columns includes key staffing metrics such as the number of employees ,various departments, job classifications, actual FTE counts and locations. • Helped identify current staffing levels and vacancies across roles and departments

Methodology

1

Identified Overtime-Heavy Departments:

- Analyzed OT data
- Two departments responsible for over 85% of total OT costs.

2

Mapped Vacancies in High-Impact Roles:

- Extracted posted vacancies
- Listed all roles with vacancies in those 2 departments

3

Calculated OT Burden per Role

- Total OT hrs role wise
- Total OT pay per role
- Total no. of employee working OT per role

4

Estimated Hiring Costs for OT Roles:

- Calculated Salary per hour for New Hires
- Pension Costs for New Hires

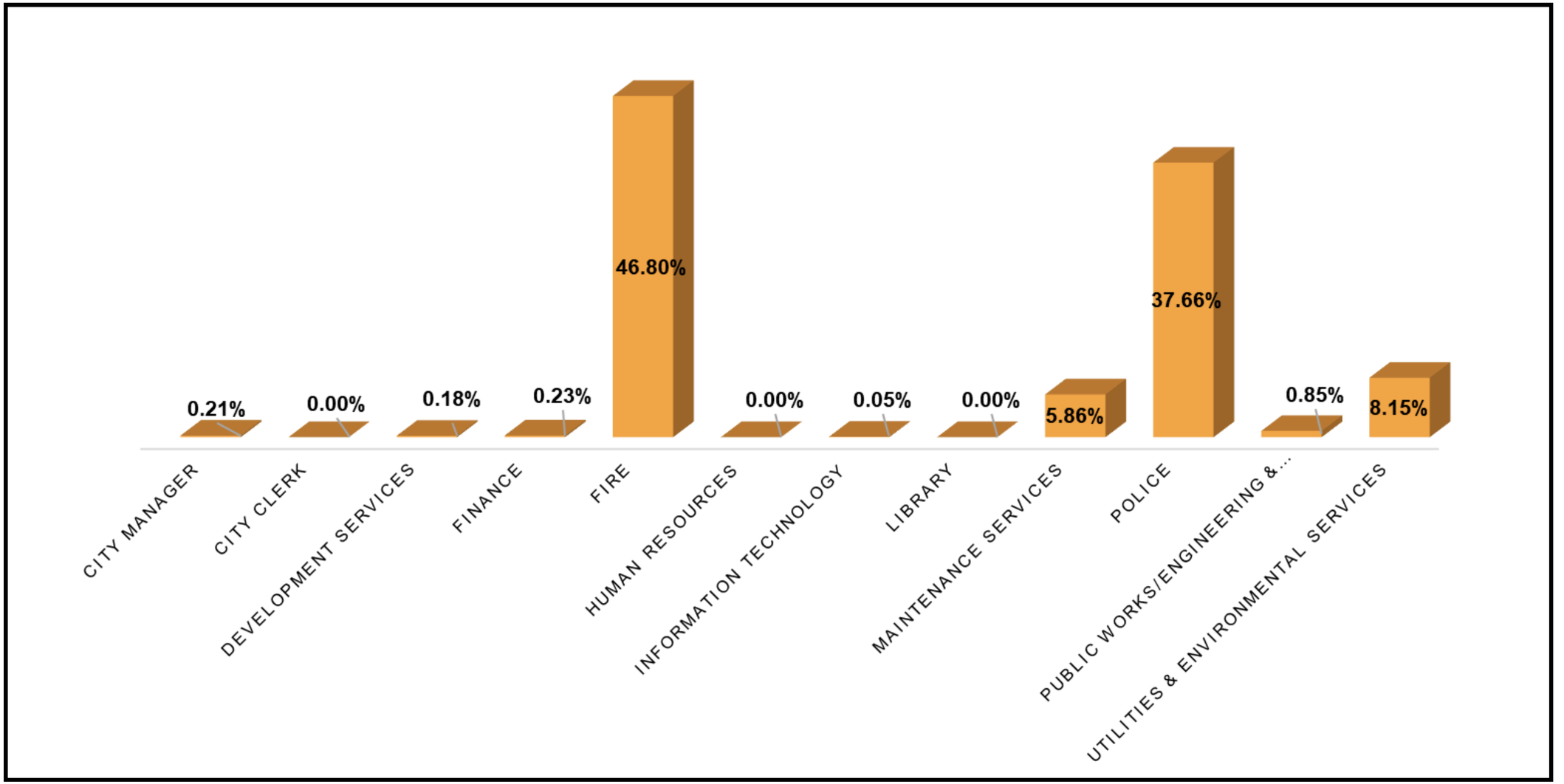
5

Scenario Modeling:

Developed 4 hiring scenarios (100%, 75%, 50%, 25%) to compare total OT vs hiring costs.

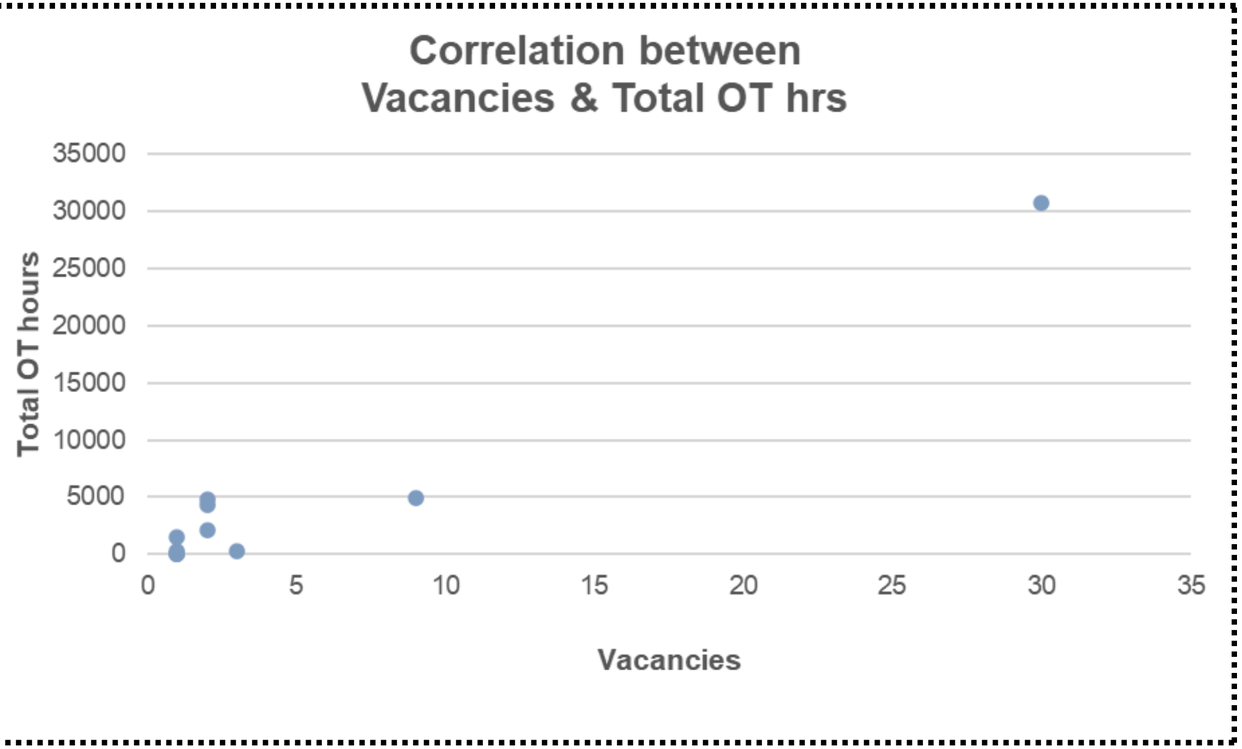
Analysis
&
Results

Department wise OT Distribution



Fire (46.8%) and Police (37.7%) departments together account for over 85% of total overtime usage, indicating a heavy reliance on OT to maintain operations in critical public safety services.

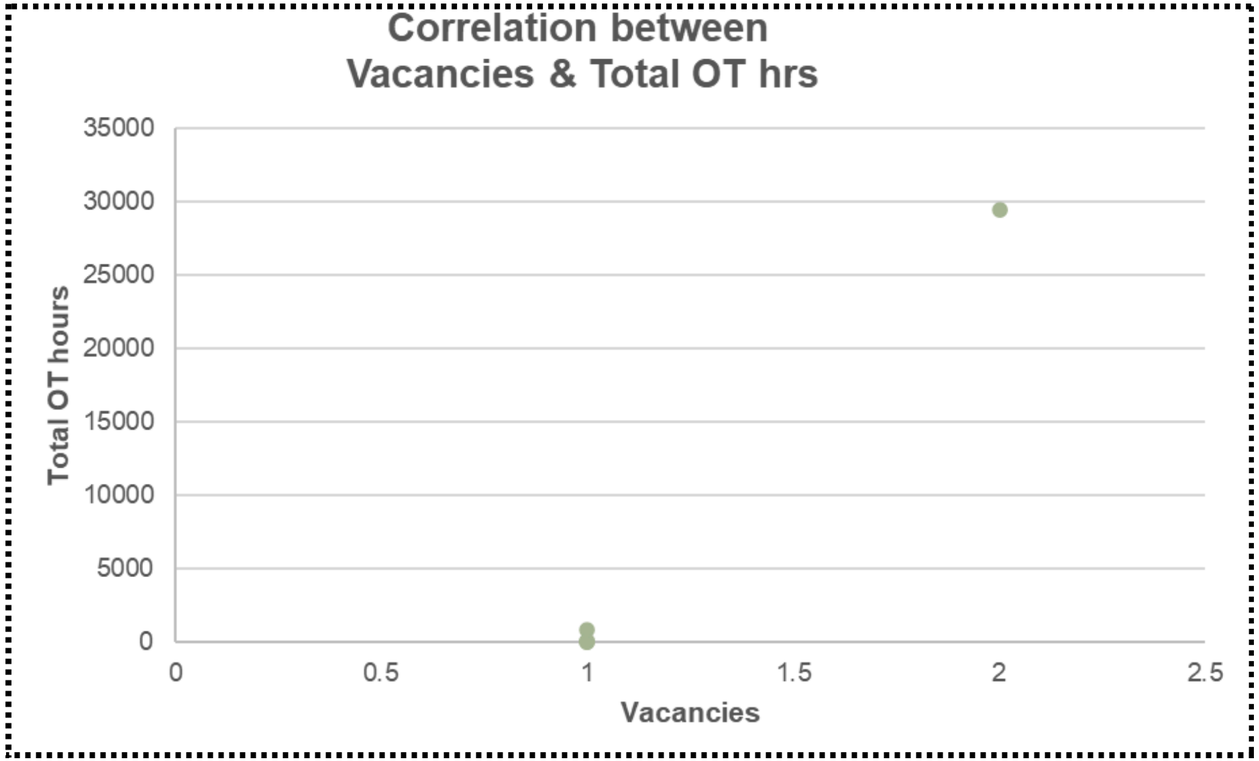
POLICE



Roles	Vaccancies	Total OT hrs
ANIMAL CARE ATTENDANT	3	234.5
ANIMAL CONTROL OFFICER	1	307
COMMUNICATIONS OPERATOR	9	4933.5
COMMUNICATIONS SUPERVISOR	2	2073.75
COMMUNITY SERVICE OFFICER	2	4827.25
POLICE LIEUTENANT	1	1530.8
POLICE OFFICER	30	30770.75
POLICE PROG ANALYST	1	0
POLICE SERGEANT	2	4249
SHELTER OPERATIONS SUPERVISOR	1	75
SHELTER VOLNTR COORD	1	0

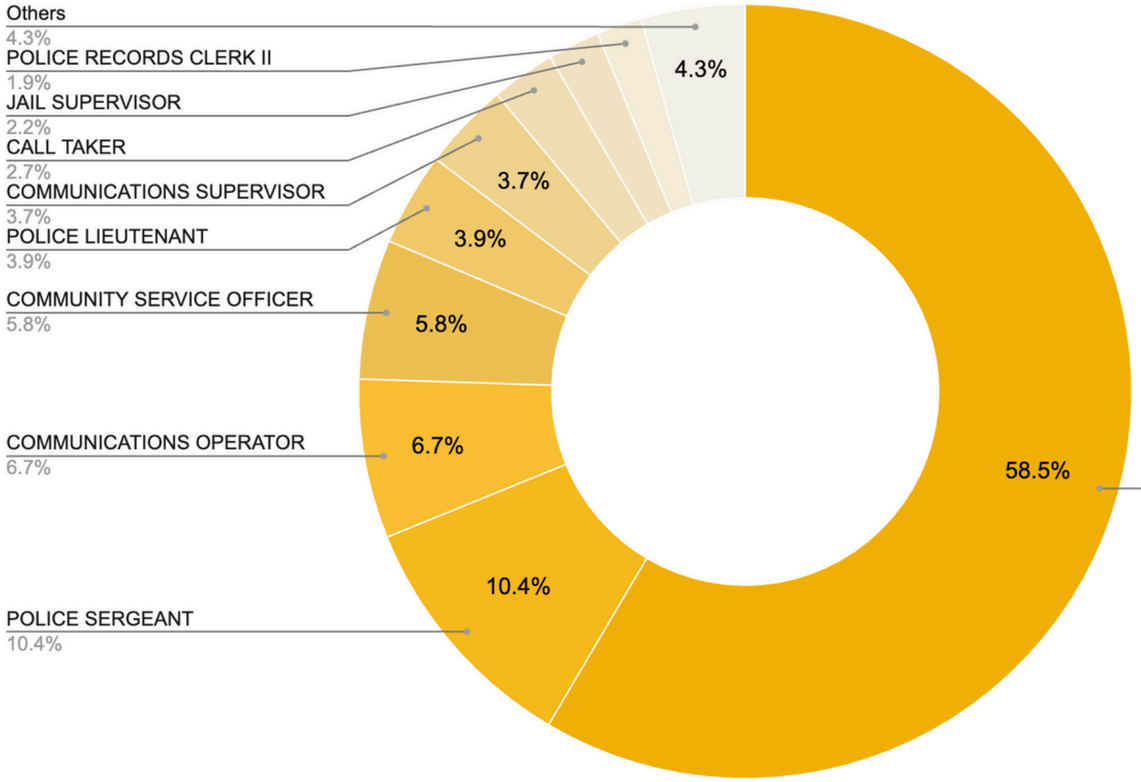
FIRE

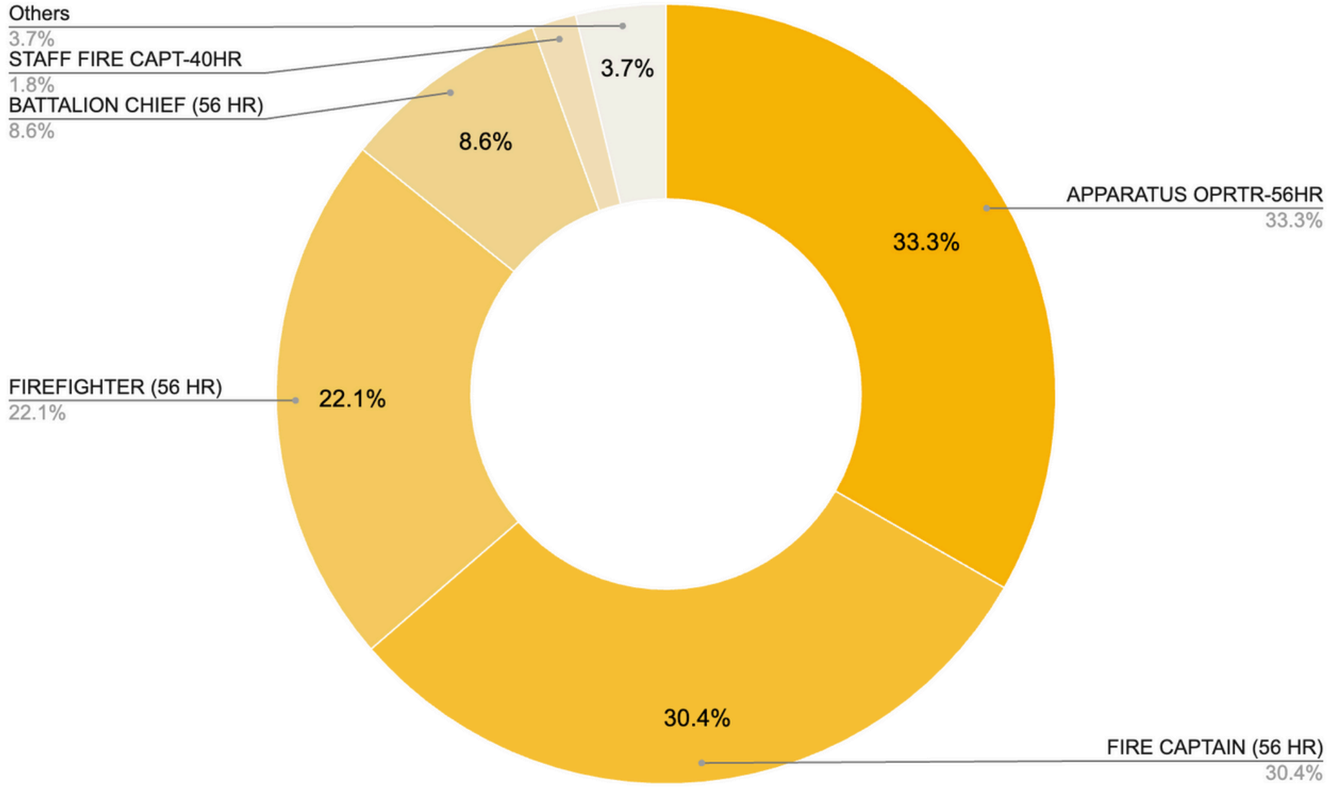
Roles	Vaccancies	Total OT hrs
ADMIN CLERK I/II	1	0
APPARATUS OPRTR-56HR	2	29446.5
DEPUTY FIRE CHF-40HR	1	130
STAFF FIRE CAPT-40HR	1	842.5
TEMP MAIL CLERK	1	0



Key Insight : The correlation coefficients are extremely high: **0.97 for Police & 0.99 for Fire**

ROLE WISE DISTRIBUTION
POLICE & FIRE





This analysis focused on key roles that drive overtime costs:

- **95.7%** of police OT is attributed to just 9 roles, and
- **96.3%** of fire OT to just 5 roles

Hiring Scenarios

Police	Vaccancies	Scenario 1: 100% Hiring	Scenario 2 : 75% Hiring	Scenario 3 : 50% Hiring	Scenario 4 : 25% Hiring
POLICE OFFICER	30	22	16	11	5
POLICE SERGEANT	2	3	2	2	1
COMMUNICATIONS OPERATOR	9	4	3	2	1
COMMUNITY SERVICE OFFICER	2	3	3	2	1
POLICE LIEUTENANT	1	1	1	1	0
COMMUNICATIONS SUPERVISOR	2	1	1	1	0
CALL TAKER	-	2	1	1	0
JAIL SUPERVISOR	-	1	1	0	0
POLICE RECORDS CLERK II	-	1	1	1	0
Total	**46**	**39**	**29**	**19**	**8**

- **Current vacancies exceed total staffing needs across all four OT/Hiring scenarios.**
- **Police Officer positions show the highest consistent demand, emphasizing the need to prioritize frontline hiring.**
- **Roles like Call Taker, Jail Supervisor, and Clerk have no current vacancies but hiring is still needed in some scenarios.**

Fire	Vaccancies	Scenario 1: 100% Hiring	Scenario 2 : 75% Hiring	Scenario 3 : 50% Hiring	Scenario 4 : 25% Hiring
APPARATUS OPRTR-56HR	2	15	11	8	4
FIRE CAPTAIN (56 HR)	0	11	8	5	3
FIREFIGHTER (56 HR)	0	11	8	6	3
BATTALION CHIEF (56 HR)	0	2	2	1	1
STAFF FIRE CAPT-40HR	1	1	0	0	0
Total	**3**	**40**	**29**	**20**	**10**

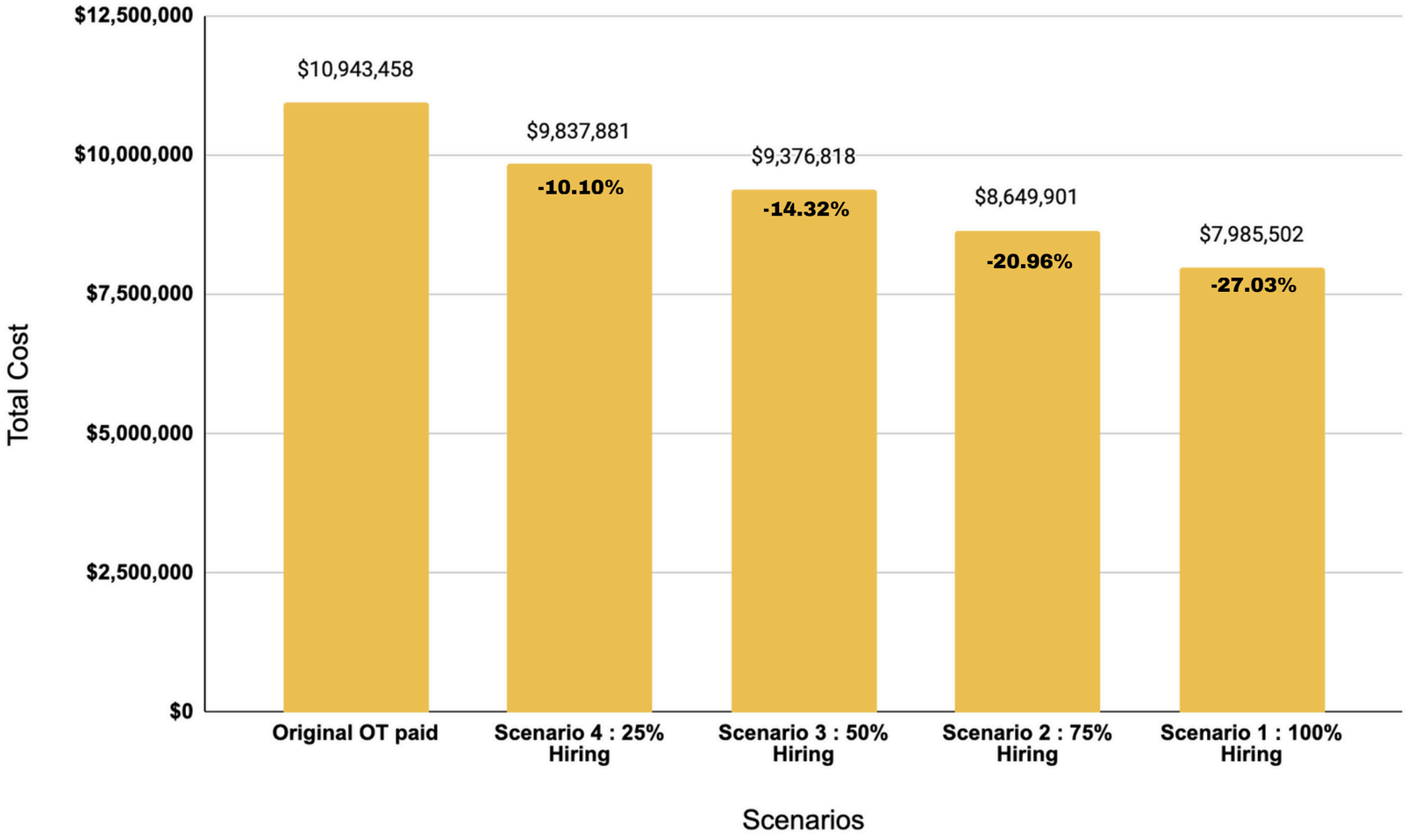
- **Across all scenarios, roles like Apparatus Operator, Fire Captain, Firefighter, and show persistent demand, especially in Scenarios 1 & 2, highlighting the need for stable, full-time staffing in emergency response.**
- **In scenarios 3 and 4, where OT dependency is high (50–75%), the department still requires 27 and 14 hires**

Time duration : July 1, 2024 - February 28, 2025

Number of weeks : 35

Department	No of OT Employees
Police	231
Fire	164

	Scenario 1 : 100% Hiring		Scenario 2 : 75% Hiring		Scenario 3 : 50% Hiring		Scenario 4 : 25% Hiring	
	Police	Fire	Police	Fire	Police	Fire	Police	Fire
Employees to be hired	39	40	29	29	19	20	8	10
Total Hiring Cost	$4,129,099	$3,856,403	$3,096,824	$2,817,212	$2,026,946	$1,878,142	$823,670	$806,618
Total OT Cost	$0	$0	$1,215,066	$1,520,799	$2,430,132	$3,041,598	$3,645,197	$4,562,396
Net Savings	**$731,164**	**$2,226,793**	**$548,373**	**$1,745,184**	**$403,185**	**$1,163,456**	**$391,396**	**$581,728**

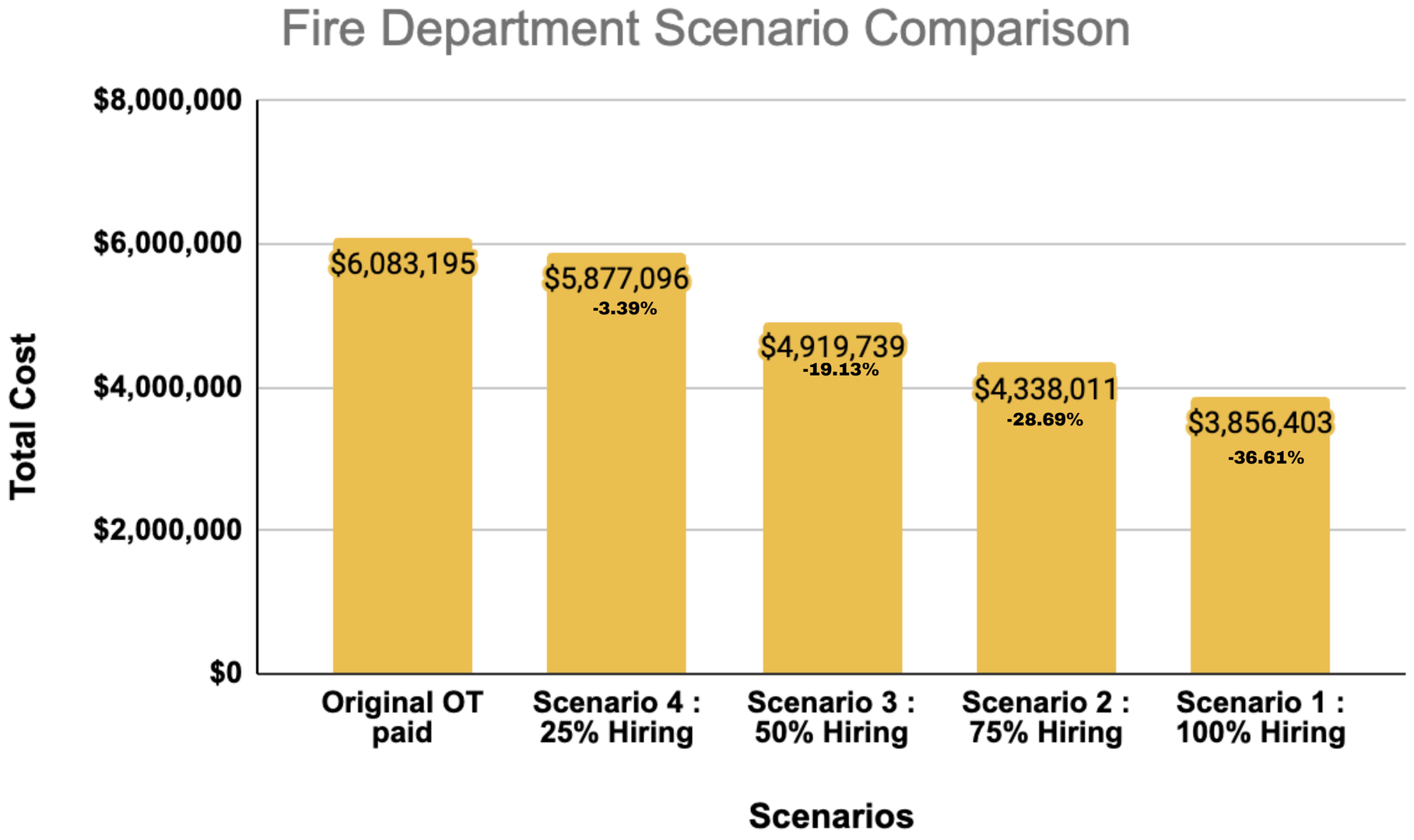


POLICE & FIRE

SCENARIO COMPARISONS

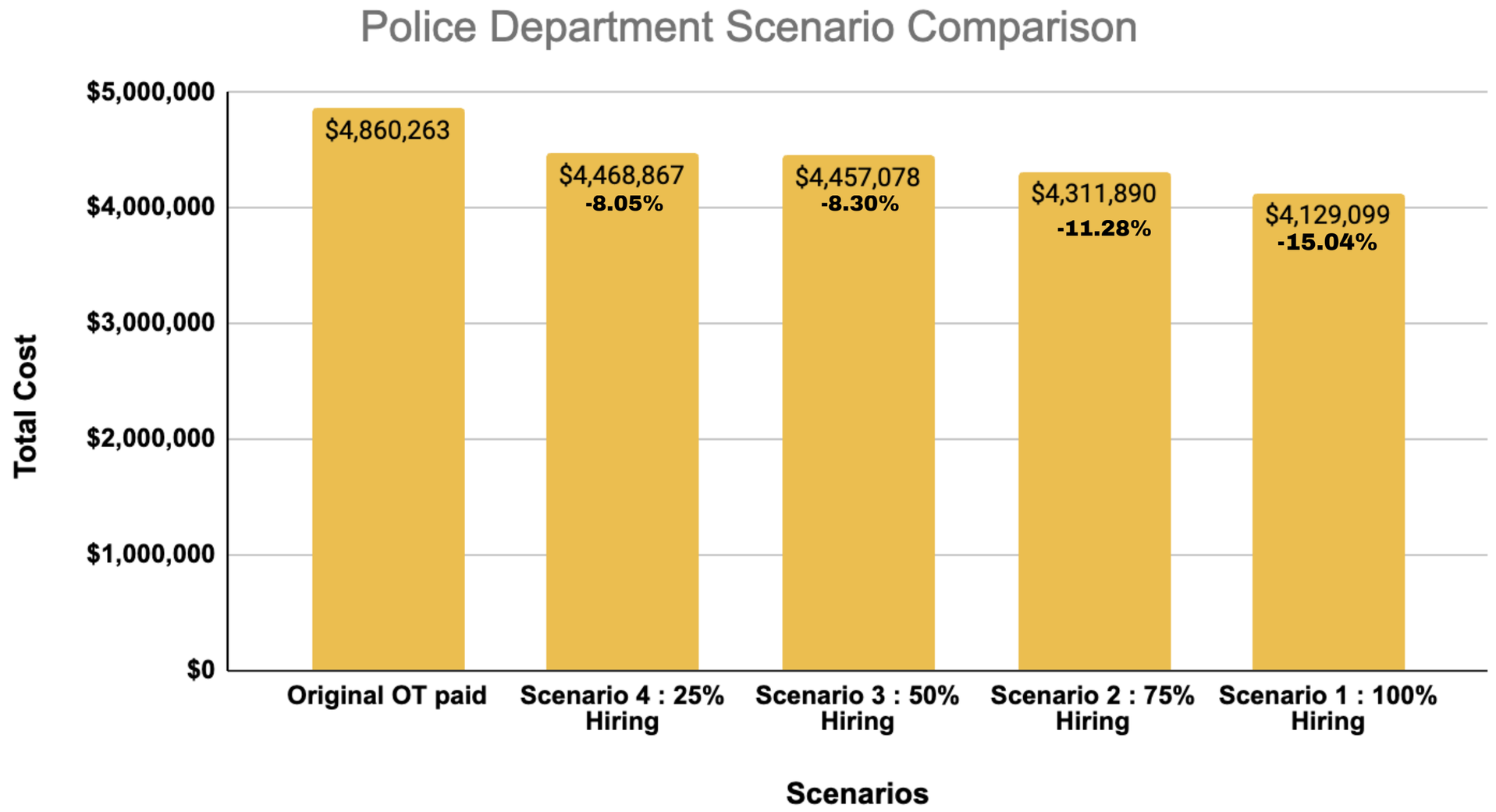
FIRE

SCENARIO COMPARISONS



POLICE

SCENARIO COMPARISONS



CALCULATIONS

Step 1 : Calculate number of employees to be hired

= Total OT hrs / Work hrs in 35 weeks (35*40 hrs or 35*56 hrs)

Step 2 : Calculate Cost of hiring FT employees

= number of employees to be hired * Average salary per hr (Salary plan) * Total hrs in 35 weeks

Step 3 : a. Calculate Pension percent

= Average of Normal cost / Annual Salary for each job class

b. Calculate the total projected pension cost

= % Pension (step 3a) * Cost of hiring (step 2)

Step 4 : Calculate OT cost

= Scenario based % of Total OT pay

Step 5 : Total Cost

= Cost of hiring (step 2) + Cost of pension (step 3b) + OT cost (step 4)

Step 6 : Calculate OT hrs available per employee

= Scenario based % of OT hrs / Total number of OT employees

Step 7: Calculate OT pay available per employee

= Total OT cost (step 4) / Total number of OT employees

Note : Cost of training and bonuses were not included.

OT Availibility Per Employee in 35 weeks

POLICE DEPARTMENT	Scenario 1 : 100% Hiring		Scenario 2 : 75% Hiring		Scenario 3 : 50% Hiring		Scenario 4 : 25% Hiring	
	OT hours per employee	OT pay per employee	OT hours per employee	OT pay per employee	OT hours per employee	OT pay per employee	OT hours per employee	OT pay per employee
POLICE OFFICER	0	$0	63	$6,089	126	$12,179	189	$18,268
POLICE SERGEANT	0	$0	42	$5,266	85	$10,532	127	$15,799
COMMUNICATIONS OPERATOR	0	$0	59	$4,025	117	$8,050	176	$12,076
COMMUNITY SERVICE OFFICER	0	$0	57	$3,532	115	$7,064	172	$10,596
POLICE LIEUTENANT	0	$0	38	$4,938	77	$9,877	115	$14,815
COMMUNICATIONS SUPERVISOR	0	$0	104	$9,316	207	$18,633	311	$27,949
CALL TAKER	0	$0	67	$3,785	134	$7,570	201	$11,356
JAIL SUPERVISOR	0	$0	114	$9,231	227	$18,462	341	$27,693
POLICE RECORDS CLERK II	0	$0	34	$1,604	68	$3,209	102	$4,813

Among all the scenarios, **Scenario 2** appears to be the most favorable option for Police and Fire for 35 weeks

- **Police** - On an average of 64 OT hours with $5,310 in OT pay per employee
- **Fire** - On an average of 123 OT hours with $11,510 in OT pay per employee

FIRE DEPARTMENT	Scenario 1 : 100% Hiring		Scenario 2 : 75% Hiring		Scenario 3 : 50% Hiring		Scenario 4 : 25% Hiring	
	OT hours per employee	OT pay per employee	OT hours per employee	OT pay per employee	OT hours per employee	OT pay per employee	OT hours per employee	OT pay per employee
APPARATUS OPRTR-56HR	0	$0	171	$12,223	342	$24,447	514	$36,670
FIRE CAPTAIN (56 HR)	0	$0	126	$11,705	252	$23,411	378	$35,116
FIREFIGHTER (56 HR)	0	$0	80	$5,069	159	$10,138	239	$15,207
BATTALION CHIEF (56 HR)	0	$0	197	$22,768	393	$45,536	590	$68,303
STAFF FIRE CAPT-40HR	0	$0	42	$5,783	84	$11,566	126	$17,348

Salary Comparisons

Role	Hayward	Fremont	San Leandro
POLICE OFFICER	$12,754	$12,285	$10,868
FIRE CAPTAIN	$16,326	$13,561	-
FIRE FIGHTER	$12,980	$10,739	-

CONCLUSION

- Police and Fire departments needs intervention as they are contributing to 85% of OT usage.
- Vacancies and overtime hours are strongly correlated—highlighting that filling key vacant roles is essential to reducing OT burden, with correlation coefficients of 0.97 for Police and 0.99 for Fire.
- Targeted hiring in high-impact roles—responsible for over 95% of overtime—can meaningfully reduce OT costs and enhance operational stability in Police and Fire departments.
- **Scenario 2 (75% hiring & 25% OT)** offers the best trade-off — striking a balance between achieving over 10% total costs reduction and maintaining a sustainable mix of overtime and new hires.
- Scenario 2 also offers — OT availability of 64 hours for Police and 123 hours for Fire on average per employee.

Contributions

Komal Nayak

Worked on the entire analysis
for **Police** Department

Osheen Gupta

Worked on the entire analysis
for **Fire** Department

Thank You!