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Fire & EMS

Management Assessment and Efficiency Study

Public Safety Committee Meeting

October 20, 2026

Opening comments

Thank you

- The consultant selection committee
- City staff, for contributing time and insights
- CPSM, for delivering a comprehensive report
- Council, for patience to allow the study to be completed in a deliberative manner

About the study

- The study is comprehensive (176+55+46=277 pages), with dozens of assessments, recommendations and pathways
- This is an informational report – there are no votes, decisions, or announcements tonight
- The assessments and recommendations are intended to provide insight and guidance that this, and future administrations, can evaluate and prioritize into actions, over time

Background and timeline

- The last fire study completed by the COB was 1995 (it did not include EMS)
- September 9: RFP was issued
- October 31: RFP was due (7 proposals were received)
- November 20: Committee reviewed evaluations and chose finalists to interview
- December 10 and 11: Interviews were conducted
- January 12: CPSM (Washington D.C.) was interviewed. They were chosen to conduct the study.
- February 3: Council approved the agreement.
- February 17 and 26: Notice to proceed, kick-off call with CPSM

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Study timeline

- March: CPSM collected data from COB and Northampton County Emergency Communications Center
- April 13, 15 and 16: CPSM visited Bethlehem
- May: CPSM developed the report
- June 30: CPSM submitted a draft
- July 13: COB requested additional information (that was in the RFP) be included in the report
- August 24: CPSM submitted draft with the requested information
- September: COB reviewed the updated draft (revisions and updates received October 9)
- October 20: Report presented to the Public Safety Committee

CPSM overall assessment

"Overall, CPSM concludes that the City of Bethlehem possesses a strong and professionally managed emergency services system supported by experienced leadership , dedicated personnel, and a longstanding commitment to public safety. *The recommendations contained within this report are not intended to correct systemic deficiencies, but rather strengthen an already capable organization by aligning staffing, leadership, deployment, facilities, emergency management, and EMS resources with the evolving risks and service demands facing the community."*

Source: Executive Summary (page 20)

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Components of the study

1. Apparatus, Equipment & Maintenance
2. Station Locations
3. Response Patterns
4. Staffing

Fire

EMS

Comments are color coded

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1. Apparatus, Equipment & Maintenance

What is the age/condition of our fleet?

Do maintenance practices support reliable and safe operation?

What replacement needs should guide future capital spending?

1. Apparatus, Equipment & Maintenance

CPSM assessment of the Fire fleet

Source: Executive Summary (page 17)
"The City has invested in modern fire and EMS apparatus"

Source: Fleet Evaluation (page 79)
"The City and BFD do have an aggressive apparatus replacement program. Since 2020 the City has appropriated $8,597,000 for major apparatus replacements. The City of Bethlehem should be commended for appropriating funding for this ongoing apparatus replacement program which CPSM considers to be a Best Practice."

Source: Recommendations (page 24)
"17. Planning should also include the routine periodic replacement of command, staff and utility vehicles"

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1. Apparatus, Equipment & Maintenance

Fire apparatus: 2019 vs 2026

2019 frontline fleet

Year	Purchase price
1998	$589,182
2000	$224,986
2000	$224,986
2002	$238,431
2009	$447,016
2009	$749,776
2013	$521,615
2016	$1,198,725
Total	$4,194,717

In service and on order

Year	Purchase price
2016	$1,198,725
2020	$783,000
2020	$800,000
2020	$1,089,000
2022	$850,000
2024	$1,300,000
2026	$1,230,000
2026	$2,545,000
Total	$9,795,725

2024 order due early 2028. 2026 orders: 48–53-month lead times.

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1. Apparatus, Equipment & Maintenance

Fire apparatus: 2019 vs 2026

2019 frontline fleet

Year	Purch
1998	$589
2000	$224
2000	$224
2002	$238
2009	$447
2009	$749,
2013	$521,615
2016	$1,198,725
Total	$4,194,717

In addition *for 2026:*

New Command Vehicle	$102,000
Fire Inspector Vehicle	$ 65,000
	$167,000

In service and on order

	orice
	0
2026	$1,230,000
2026	$2,545,000
Total	$9,795,725

2024 order due early 2028. 2026 orders: 48–53-month lead times.

1. Apparatus, Equipment & Maintenance

CPSM assessment of the EMS fleet

Source: EMS Fleet Evaluation (page 150)
"The current replacement philosophy demonstrates proactive fleet management and reflects industry's best practices."

"Vehicle inspection and fleet maintenance activities appear to be conducted through a structured preventative maintenance program designed to maintain operational readiness"

"CPSM assesses that Bethlehem EMS maintains an appropriate fleet management strategy supported by reserve apparatus, preventative maintenance practices, and a structured replacement program."

Source: Recommendations (page 28)
"35. Continue the current planned ambulance replacement schedule and maintain orders sufficiently in advance to account for industry production delays."

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1. Apparatus, Equipment & Maintenance

EMS fleet and planned replacements

Year / make	Miles	Replacement plan
2014 Chevy diesel	121,904	Purchased 2024 ($300,000), due late 2026
2016 Chevy diesel	121,108	Purchased 2024 ($300,000), due late 2026
2016 Ford	115,291	Purchased 2026 ($350,000), due 2028
2017 Ford	105,579	2027 purchase: $350,000 is allocated
2019 Ford	82,495	2028 purchase: $375,000 is allocated
2021 Ford	59,837	2029 purchase: $375,000 is allocated
2021 Ford	53,624	
2023 Chevy	37,827	

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1. Apparatus, Equipment & Maintenance

What is the age/condition of our fleet?

Do maintenance practices support reliable and safe operation?

What replacement needs should guide future capital spending?

City assessment: Recent investment and planned replacements for both the Fire and EMS follow best practices and meet key fleet needs.

2. Station Locations

How well do our current station locations cover the City?

Do existing facilities meet crew, apparatus, and equipment needs?

What is the condition of existing facilities?

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2. Station Locations

Current Fire and EMS stations (boxed rows share space)

Fire stations	EMS stations
Schweder Fire Station 1 419 East 4th Street	Medic 1 (24/7) 419 East 4th Street
Lincoln Fire Station 5 2412 Easton Avenue	Medic 7 (24/7) 201 Dewberry Avenue
Memorial Station 6 512 West Broad Street	Medic 6 (11am–11pm, 3 days/week) 512 West Broad Street
Northwest Fire Station 9 1665 Catasauqua Road	Medic 2 (8am–8pm, 7 days/week) 540 Stefko Boulevard

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2. Station Locations

CPSM assessment of Fire station coverage

Source: Executive Summary (page 19)

"The City's fire stations continue to provide an effective geographic distribution of resources on the north side; however, all four facilities are between 42 and 72 years old. While functional, aging facilities will require continued capital investment, modernization, and lifecycle planning to support future operational needs."

Source: Recommendations (page 23)

"25. As part of any long-term strategic and/or capital planning process that the City of Bethlehem should strongly consider the construction of an additional fire station in the southeastern area of the city, an area that is experiencing significant industrial, warehousing, and commercial growth...Staffing this station can be neutral by moving Engine 3 to the new station."

2. Station Locations

CPSM assessment of EMS station coverage

Source: BEMS Response Times (page 142)
"CPSM assesses that the current station network provides reasonable geographic coverage and supports existing deployment strategies. No immediate closures or relocations are recommended based on available operational data."

Source: Recommendations (page 26)
"27. Including EMS stations or space in any facility long-range renovation planning that is focused on apparatus accommodations, crew facilities, technology infrastructure, and operational efficiency."

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2. Station Locations

Fire & EMS facilities: capital investment

2026 NON-UTILITY CAPITAL IMPROVEMENT PROJECT DETAIL

PUBLIC WORKS – FACILITIES

Facilities Capital Improvements **$1,019,365**

Funding is to support relatively small capital improvements identified by the comprehensive facilities evaluation, other previously identified improvements, and unexpected necessary capital improvements to support all City facilities. Currently identified improvements include HVAC replacement at the Ice House, and replacement of air handlers, heat exchangers, pumps, pneumatic controls, air filters, condensers and pumps at various facilities, exterior improvements, railings, new windows on the ground floor for the Police Department, HVAC component replacements, replacement of pavers on the plaza, and upgrade of the City Hall elevators (parts are no longer available for existing elevators). In addition, funding is included for improvements/renovations at the City's Fire Houses focusing on functional concerns of the facilities and energy efficiency improvements. Work includes replacing/upgrading heating/cooling/ventilation systems, paving, replacement of doors/windows, pool improvements, and other facility interior/exterior improvements and renovations. Safety concerns and code issues identified by Public Works, Safety Committee, Fire Department, and Inspections will also be addressed. Projects may also include roof renovations/replacement, exhaust/air systems to improve air quality, emergency lighting, renovation/replacement of unsafe structures, purchase of special equipment as deemed necessary to handle safety/code requirements, and other unforeseen repairs/improvements to facilities/equipment to extend the life of capital assets. Funding this line item also includes evaluation and improvements to the Police Department space.

Funding Source:		
LRR (2024)	519,365	69024-660999
Capital Reserve 2026-2029	2,000,000	62026-660999
	2,519,365	

2. Station Locations

Easton Avenue Fire Station

Easton Ave Fire Station **$235,000**

Engineering will evaluate, design, and estimate project cost for additional bay space at the existing firehouse on Easton Avenue that is needed to house reserve apparatus.

Funding Source:

Capital Reserve 2026-2029	235,000	62026-662057

2. Station Locations

How well do our current station locations cover the City?

Do existing facilities meet crew, apparatus, and equipment needs?

What is the condition of existing facilities?

City assessment: Current facilities need continued capital investment and should continue to be included in the Facilities capital plan. A southeastern Fire station is a long-term consideration. No immediate EMS relocation.

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3. Response Patterns

What types of calls are we responding to?

How has call volume and call types changed over time?

How do overlapping calls affect resource availability?

What do dispatch, turnout and travel times tell us?

How could regional aid improve service?



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3. Response Patterns

National fire trends

Source: Preface (page 3)

"The estimated number of reported home fires in 2023 was approximately 55 percent lower than 1980, while one- and two-family residential fires declined by roughly 57 percent during that same period."

"Total fires in the United States were approximately 54 percent lower in 2020 than 1980"

"Although population growth, urban expansion, and increased development have escalated overall community risk exposure, the frequency and severity of fires have steadily diminished due to substantial improvements in prevention and protection strategies."



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3. Response Patterns

Factors contributing to fewer fires

Source: Preface (page 4)

CPSM points to several major factors contributing to the decline in fire incidents:

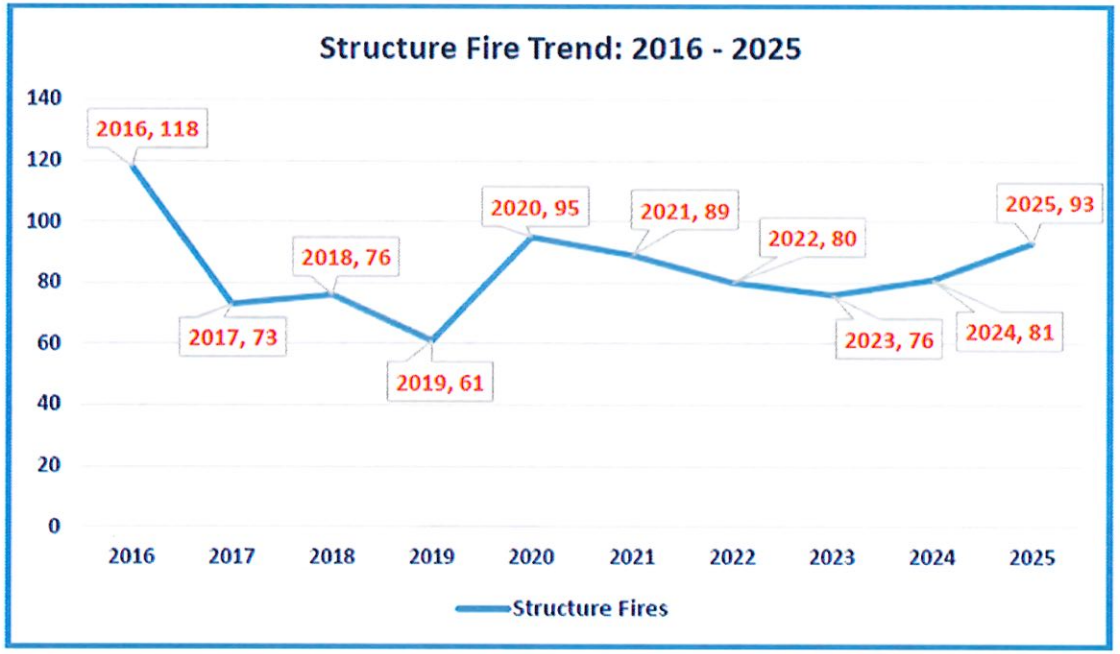
- *Enhanced public awareness and fire safety education campaigns*
- *Proactive inspection and code enforcement programs*
- *Modern building codes require safer construction practices, including fire-resistant materials*
- *The widespread adoption of smoke alarms and automatic fire sprinkler systems*
- *Advances in electrical standards and safer building practices*

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3. Response Patterns

Structure fire trends

Figure 14: Structure Fire Trend: 2016 – 2025 Source: page 85



Over a ten-year period (2016-2025), structure fires peaked in 2016 (118) and were at the lowest total in 2019 (61). The trend from 2019 is generally higher than the low in 2019 with dips in 2021, 2022, and 2023. In years 2024 and 2025 the trend for structure fires is up but less than the peak in 2016 by 21%.

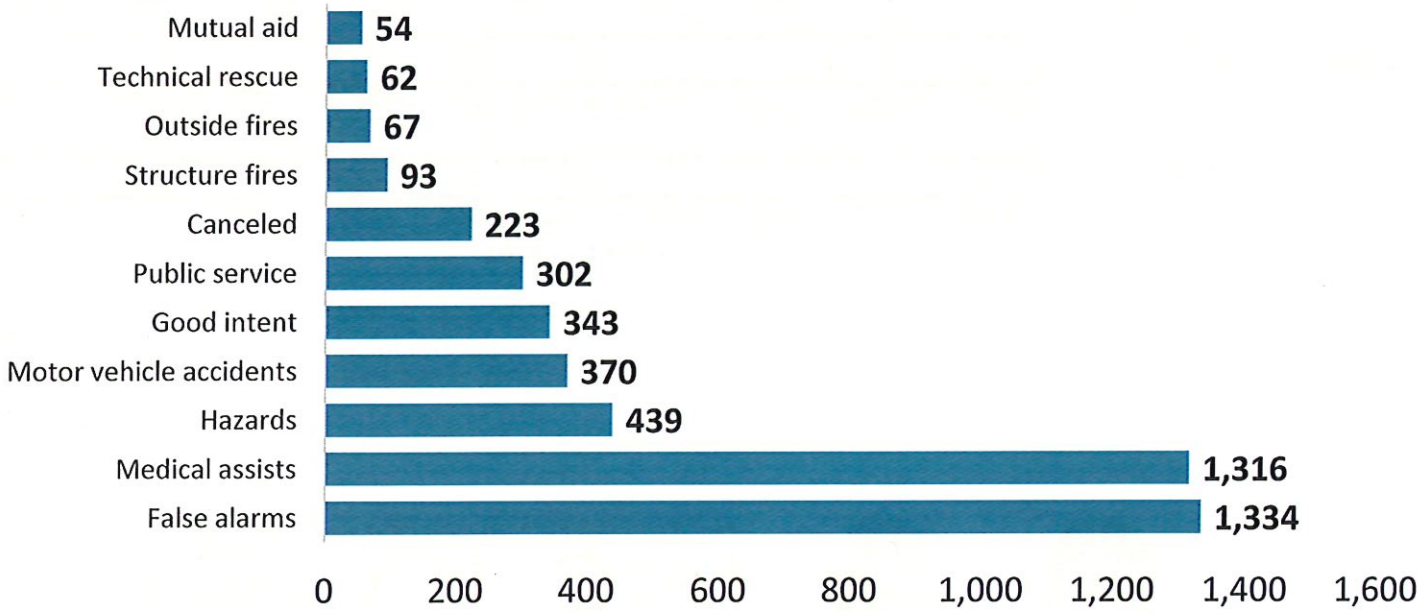
U.S. fires down 54% since 1980.

Bethlehem fires down 21% since 2016.

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3. Response Patterns

What types of calls does Fire handle?



2025: 4,603 total calls. Source: Page 19

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3. Response Patterns

Fire calls by type

Bethlehem Fire 10-Year Call Workload Source: Page 19

Call Type	Year (page 19)									
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Medical assist	1,933	2,317	1,789	1,125	951	1,108	1,111	1,048	1,222	1,316
MVA	357	355	262	296	295	370	349	325	419	370
EMS Subtotal	**2,290**	**2,672**	**2,051**	**1,421**	**1,246**	**1,478**	**1,460**	**1,373**	**1,641**	**1,686**
False alarm	1,034	1,083	867	872	1,012	1,089	1,115	1,129	1,226	1,334
Good intent	237	220	154	232	190	269	258	294	382	343
Hazard	394	380	352	331	399	418	457	454	500	439
Outside fire	106	85	62	64	96	85	98	97	95	67
Public service	433	416	285	418	346	361	319	359	452	302
Structure fire	118	73	76	61	95	89	80	76	81	93
Technical rescue	54	55	45	48	51	58	49	60	84	62
Fire Subtotal	**2,376**	**2,312**	**1,841**	**2,026**	**2,189**	**2,369**	**2,376**	**2,469**	**2,820**	**2,640**
Canceled	317	277	179	137	159	195	192	212	220	223
Mutual aid	40	29	24	39	28	37	42	44	41	54
Other Subtotal	357	306	203	176	187	232	234	256	261	277
Total	**5,023**	**5,290**	**4,095**	**3,623**	**3,622**	**4,079**	**4,070**	**4,098**	**4,722**	**4,603**

29% of calls are medical assist

29% of calls are false alarms. False alarms have increased 54% since 2018.

2% of calls are structural fires. Structural fires have decreased 21% since 2016.

Calls average 12.6 per day. Total calls have decreased 13% since 2017.

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3. Response Patterns

False alarms

False Alarms by Year

Year	Calls	Runs
2016	1,034	1,973
2017	1,083	2,217
2018	867	1,825
2019	872	2,002
2020	1,012	2,236
2021	1,089	2,406
2022	1,115	2,504
2023	1,129	2,692
2024	1,226	2,962
2025	1,334	3,285

Source: Page 18

Source: False Alarm – Unnecessary Fire Alarm – System Responses (page 87-88)

"Over the ten-year period from 2016 through 2025, false alarms consistently represented a significant component of the Bethlehem Fire Department's non-fire and non-hazard workload. Particularly noteworthy is the increase in false alarm activity in recent years."

"One of the most effective tools available to a community for addressing recurring false alarms is a well-designed and consistently enforced false alarm ordinance."

"CPSM recommends that the City should fully enforce the current Emergency Alarm System Ordinance." (Note: It is Article 735)

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3. Response Patterns

Overlapping Fire calls

Table 16: Frequency of Overlapping Calls – City Wide Source: Page 90

Scenario	Number of Calls	Percent of Calls	Total Hours
No overlapped call	3,448	74.9	1,595.9
Overlapped with one call	952	20.7	220.8
Overlapped with two calls	166	3.6	27.1
Overlapped with three calls	27	0.6	2.5
Overlapped with four calls	6	0.1	0.6
Overlapped with five calls	3	0.1	0.2
Overlapped with six calls	1	0.0	0.0

75%: 0 overlapping calls
96%: 0–1 overlapping calls
99%: 0–2 overlapping calls

Source: Resiliency (page 92)
"No station had more than 8.7% of their calls overlapped with one of more incidents. This indicated good resiliency across the city."

3. Response Patterns

Fire calls per hour

Table 17: Frequency Distribution of the Number of Calls

Source: page 90

Calls in an Hour	Frequency	Percentage
0	5,322	60.8
1	2,529	28.9
2	716	8.2
3	147	1.7
4+	46	0.5
Total	**8,760**	**100.0**

This resiliency measure is the frequency distribution of calls, or how many calls occur in an hour.

The table to the left tells us that citywide, 60.8 percent of the time there are no calls in an hour; 37.1 percent of the time there are one or two calls in an hour; and 2.2 percent of the time there are three or more calls occurring at either the same time or closely grouped.

Coupled with the table above there are only minor absorption resiliency issues.

61%: 0 calls/hour 90%: 0–1 calls/hour 98%: 0–2 calls/hour

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3. Response Patterns

CPSM assessment of Fire resiliency

The next table looks at the duration of calls, a measure that contributes to or may negate overlapping calls in a fire management zone, particularly those that last one or more hours.

In Bethlehem:

- **93.7** percent of all calls were managed in less than one hour.
- **4.7** percent of all calls were managed in one to two hours.
- **1.6** percent of all calls were managed in two or more hours.

More than 90% of all calls are managed in 1 hour or less, increasing overall restoration resiliency.

Source: Page 91

From Resiliency (page 92):
"CPSM assesses that overall, the BFD has only minor resiliency issues across the department."



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3. Response Patterns

EMS workload

Source: Executive Summary (page 17)

"Like most modern fire departments throughout America, emergency medical services represent the predominant workload within Bethlehem's emergency response system."

"Bethlehem EMS has evolved into a high-performing municipal EMS system that delivers advanced prehospital care while operating in an increasingly demanding healthcare environment"

3. Response Patterns

EMS calls over time

Bethlehem EMS 10-Year Workload

Source: Page 18

Year	BEMS Responding	External Agency Only	Total Calls
2016	10,921	560	11,481
2017	11,373	625	11,998
2018	8,869	443	9,312
2019	8,608	552	9,160
2020	9,678	489	10,167
2021	11,125	716	11,841
2022	11,495	954	12,449
2023	11,393	824	12,217
2024	11,912	632	12,544
2025	12,260	637	12,897

Historical BEMS Call Workload

BEMS Responding = No Mutual Aid

External Agency Responding = Mutual Aid ambulances handled the call when BCEMS units were not available.

+4 paramedics

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3. Response Patterns

EMS overlapping calls

Table 44: Frequency of Overlapping Calls (2025)

Source: pages 131–132

Scenario	Number of Calls	Percent of Calls	Total Hours
No overlapped call	4,526	36.9	3,026.9
Overlapped with one call	4,694	38.3	1,631.1
Overlapped with two calls	2,553	20.8	583.4
Overlapped with three calls	456	3.7	72.4
Overlapped with four calls	26	0.2	2.8
Overlapped with five calls	3	0.0	0.4
Overlapped with six calls	1	0.0	0.2
Overlapped with seven calls	1	0.0	0.0

36.9% of calls did not overlap; 38.3% overlapped with one call; 24.7% overlapped with two or more calls.

Table 45: Frequency Distribution of the Number of Calls

Calls in an Hour	Frequency	Percentage
0	2,299	26.2
1	2,854	32.6
2	2,057	23.5
3	1,052	12.0
4	378	4.3
5	103	1.2
6+	17	0.2
Total	8,760	100.0

This measure shows how many calls occur in an hour. Citywide, 26% had no calls; 56% had one or two; and 18% had three to six-plus concurrent or overlapping calls.

Fire comparison (citywide): 75%: no overlapping calls 61%: no calls in an hour

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3. Response Patterns

CPSM assessment of ambulance utilization

Source: Ambulance Unit Hour Utilization (page 136-137)

"CPSM assesses that overall, the Bethlehem Emergency Medical Services (BEMS) experiences moderate to high system resiliency pressures, driven primarily by simultaneous incident demand, transport workload, and the limited number of concurrently staffed frontline ambulances."

"In terms of peak operational demand, Bethlehem EMS experiences its highest call volumes during daytime hours, particularly between 10:00am and 5:00pm…Overall peak time is between 9:00am and 9:00pm."

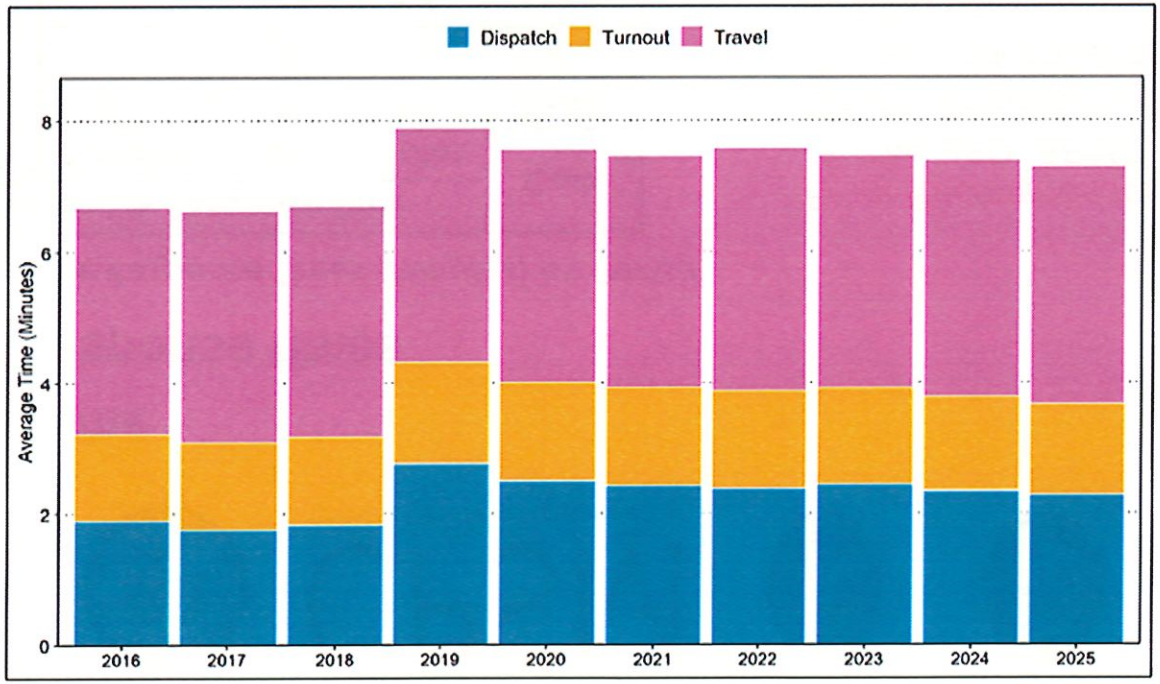
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3. Response Patterns

Fire response times by year

FIGURE 2: Average Response Time by Year

Source: Data Report (page 12)



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3. Response Patterns

Dispatch and response times

Table 26: 90th Percentile Response Times (Minutes) by Period

Year	90th Percentile Response Time				Calls
	Dispatch	Turnout	Travel	Total	
2016	2.9	2.1	5.8	9.6	3,645
2017	2.7	2.1	6.0	9.5	3,897
2018	2.8	2.1	6.0	9.6	3,062
2019	4.5	2.4	6.2	12.0	2,744
2020	3.8	2.2	6.1	11.2	2,768
2021	3.8	2.2	6.2	11.3	2,999
2022	3.5	2.2	6.6	11.8	2,997
2023	3.9	2.2	6.1	11.1	2,804
2024	3.7	2.2	6.3	11.2	3,143
2025	3.5	2.1	6.3	10.9	3,051

Source: Page 99

From Recommendations (page 21):
"6. The BFD, BEMS, and Northampton County Emergency Communications Center work collaboratively to ensure that all EMS calls are properly categorized as to the correct EMD classification so the appropriate resources and personnel can be dispatched immediately and simultaneously."

Total response time (90th percentile):
9.5 min (2017), 12.0 (2019), 10.9 (2025).
CPSM links the 2019 increase to the county dispatch transition.

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3. Response Patterns

City assessment of dispatch recommendations

CPSM recommendation #6 (shown on slide 36) addresses the increase after the transfer of Dispatch in 2019

CPSM assesses (page 100) that although Turnout and Travel time have been historically consistent, Dispatch, Turnout, and Travel times are all above the NFPA 1710 standard and added:

"As a community's expectations and desired level of service are unique, no two communities then will be alike. Response performance goals must be shaped to match community expectations, level of community risk, and the ability to pay for contemporary Fire and EMS resources required to achieve the level of service and performance expected by the community."

CPSM recommends (page 100) adopting performance benchmarks for the 3 categories and added (page 101):

"These benchmarks are recommended as more realistic and performance appropriate standards based on historical response trends…Establishing tiered benchmarks that reflect both core and fringe service areas provides a more accurate and achievable framework for evaluating current performance and guiding future deployment and station location decisions."



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3. Response Patterns

NFPA standards: City perspective

- The National Fire Protection Association (NFPA) is a private, non-profit organization, meaning its standards are voluntary recommendations – they are not law
- NFPA standards are considered ideal safety benchmarks
- The NFPA defines different levels of risk that exist at different times, depending on circumstances
- Almost no small or mid-sized fire departments achieve compliance to the standards
- CPSM suggests decisions should be made locally by communities that understand their own unique risks, tax bases, and mutual aid agreements, rather than a one-size-fits-all national standard



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3. Response Patterns

CPSM on NFPA standards and local service levels

Source: Preface (Page 14)

"While NFPA 1710's performance and staffing standards establish nationally recognized benchmarks for effective and safe emergency service delivery...These standards should therefore serve as important performance goals and planning benchmarks rather than being viewed as universally attainable requirements."

"Municipalities should establish realistic, risk-based service delivery objectives that consider community hazards, available resources, fiscal responsibility, and regional response capabilities."

3. Response Patterns

What types of calls are we responding to?

How has call volume and call types changed over time?

How do overlapping calls affect resource availability?

What do dispatch, turnout and travel times tell us?

How could regional aid improve service?

City assessment: Fire calls and structural fires are down, and there is low Resiliency pressure on Fire. False alarms are the largest call category and have increased significantly. EMS calls are rising, with moderate to high Resiliency pressure. Dispatch has improved recently but remains slower than before the 2019 move to county dispatch.

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4. Staffing

Are our current staffing levels adequate to respond to the number and types of calls we're receiving?

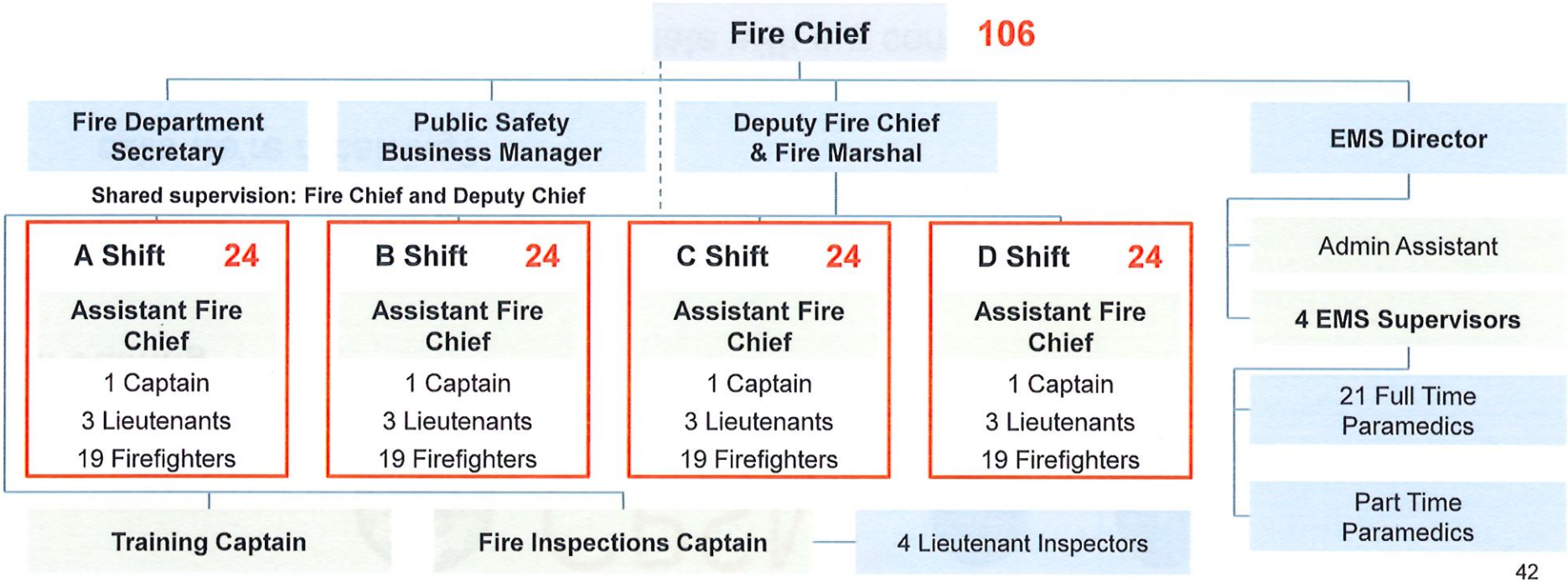
Do our staffing schedules correlate with our community's changing levels of risk throughout the day?

What factors contribute to daily staffing and attendance levels?

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4. Staffing

Fire Department organization



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4. Staffing

Fire suppression staffing

- CPSM applies NFPA standards to recommend staffing 22 on fire suppression in the near-mid term (page 113-114)
- The City of Bethlehem budgets for a staff of 24 on fire suppression (1 Assistant Chief, 1 Captain, 3 Lieutenants, 19 Firefighters)
- Leave coverage and vacancies affect daily company staffing
- Reliable regional aid, improved staff utilization, additional positions offer multiple options

4. Staffing

Staffing for major incidents

On pages 102-116 CPSM applies NFPA standards to recommend significant increases in staffing in order to respond to larger, rare incidents such as apartment buildings and high rises. They qualify the assessment stating:

"NFPA 1710 does allow fire departments to rely on established automatic and mutual aid agreements to meet the requirements of Section 5.2, provided these resources are dispatched as part of the initial alarm."

Alarms	2025
1	81
2	12
3	1
4	0

Data provided by BFD



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4. Staffing

Mutual aid and automatic aid

Source: Mutual and Automatic Aid (page 80)

"Mutual aid and automatic aid are critical components of modern fire and emergency service delivery, enabling jurisdictions to share resources and provide support when local capabilities are exceeded.

"Mutual aid involves neighboring departments responding upon request to assist with large, complex, or high demand incidents, while automatic aid dispatches resources from adjacent jurisdictions simultaneously without local units based on predetermined response plans."



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4. Staffing

CPSM assessment of regional aid

Source: Mutual and Automatic Aid (page 81)

"CPSM assesses that the mutual aid system which the BFD currently participates in is limited in practice due to limited staffing of surrounding departments and by the provisions in the current CBA. CPSM further concludes that automatic aid provides even greater operational value, particularly for a department the size of the BFD."

"CPSM recommends that BFD prioritize a regional planning effort that includes the implementation of automatic aid agreements with the City of Allentown and City of Easton. Strengthening these relationships will bolster first-alarm structure fire responses, increase resiliency, and improve BFD's ability to consistently assemble an Effective Response Force for structure fires particularly beyond single-family residential structures such as apartments, commercial buildings, high rises, and other larger structures."



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4. Staffing

Daily staffing considerations

1. Historical performance/success
2. National Standards (NFPA)
3. Mutual and/or automatic aid opportunities
4. Metrics (driving down demand)
5. Fill vacancies quickly (including a summer academy)
6. Staff utilization: time off work
7. Schedules: 3 platoons or fixed, unequal day/night shifts, as in other departments
8. Hire more staff (full-time or part-time, as in EMS)

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4. Staffing

City service workload and staffing context

Department	Calls in 2025	Personnel Per Shift
Police	56,461	10-16
EMS	12,260	4-8
Fire	4,603	18-24



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4. Staffing

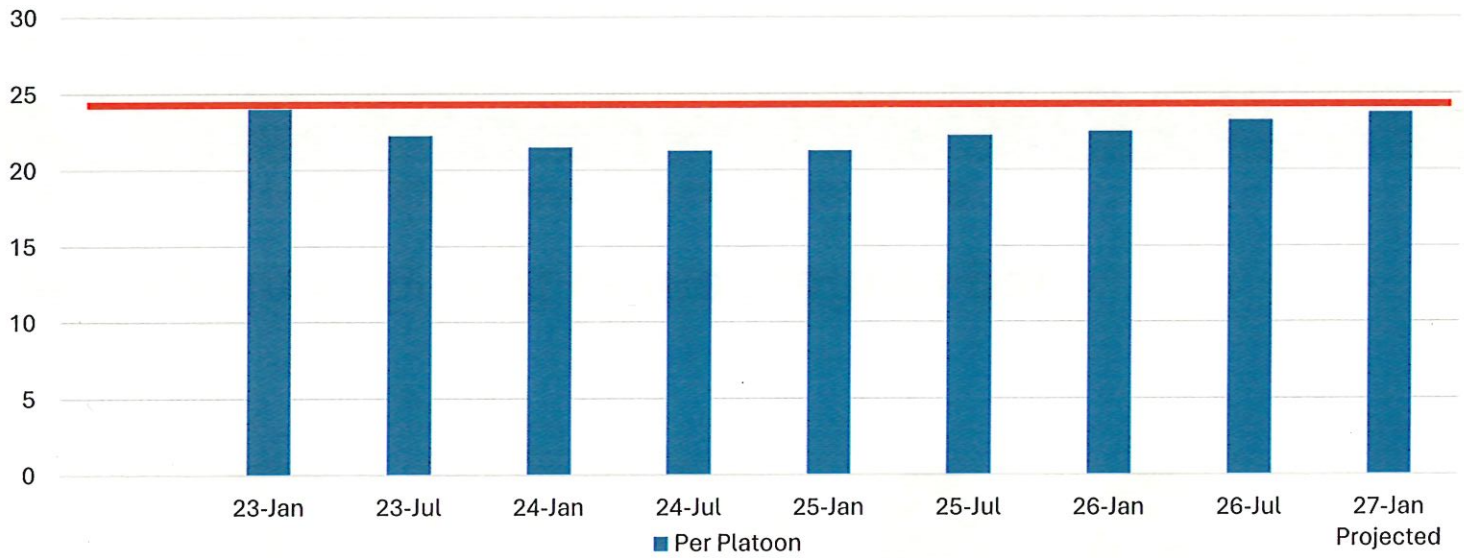
Fire Academy



2024: 15 sent to academies
2025: 12 sent to academies
2026: 10 sent to academies

4. Staffing

Filled positions per platoon



4. Staffing

Vacancies explain only part of the staffing gap

July 1–October 1, 2026: average department-wide vacancies = 2.29

Staffing measure	Average
Estimated vacancies per platoon	0.57
Estimated filled positions per platoon	23.43
Actual employees reporting per shift	17.63
Estimated remaining availability gap	5.79

Estimated remaining gap: 5.79 per shift.

20 employees reported on 21 of 186 shifts (11.3%) between July 1 and October 1, 2026, before overtime.

Assumes frontline vacancies spread evenly across four 24-person platoons.

Source: City staffing and vacancy records, July 1–October 1, 2026



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4. Staffing

What reduces the number available each shift?

Reason	Effect on staffing availability
Sick leave	Temporary absence, often with little advance notice
Personal / vacation	Scheduled or short-notice time away from duty
Injury / workers' compensation	Absence duration and return date may be uncertain
Training	Personnel may be away from regular assignments
Academy	Recruits need training before regular deployment
Vacancy	Unfilled position after retirement, termination or resignation

4. Staffing

Leave use and staffing impacts

Source: Leave Use and Staffing Impacts (page 121)

"Bethlehem's leave structure provides firefighters with significant annual leave opportunities…These entitlements represent a substantial number of potential personnel absences over the course of a year"

Calendar Year	Sick Leave Usage	Personal/Vacation Leave Usage	Workers' Comp. Leave Usage
2023	10,219.20	17,037.75	3,076.80
2024	10,911.20	17,896.50	2,679.60
2025	9,296.00	19,042.25	2,158.80

In summary, over the three-year period, the Bethlehem Fire Department averaged approximately 30,773 hours of sick, personal/vacation, and workers' compensation leave annually. With four platoons, this equates to approximately 7,693 hours of leave per platoon per year.

On average, each platoon accounted for approximately:

2,536 hours of sick leave

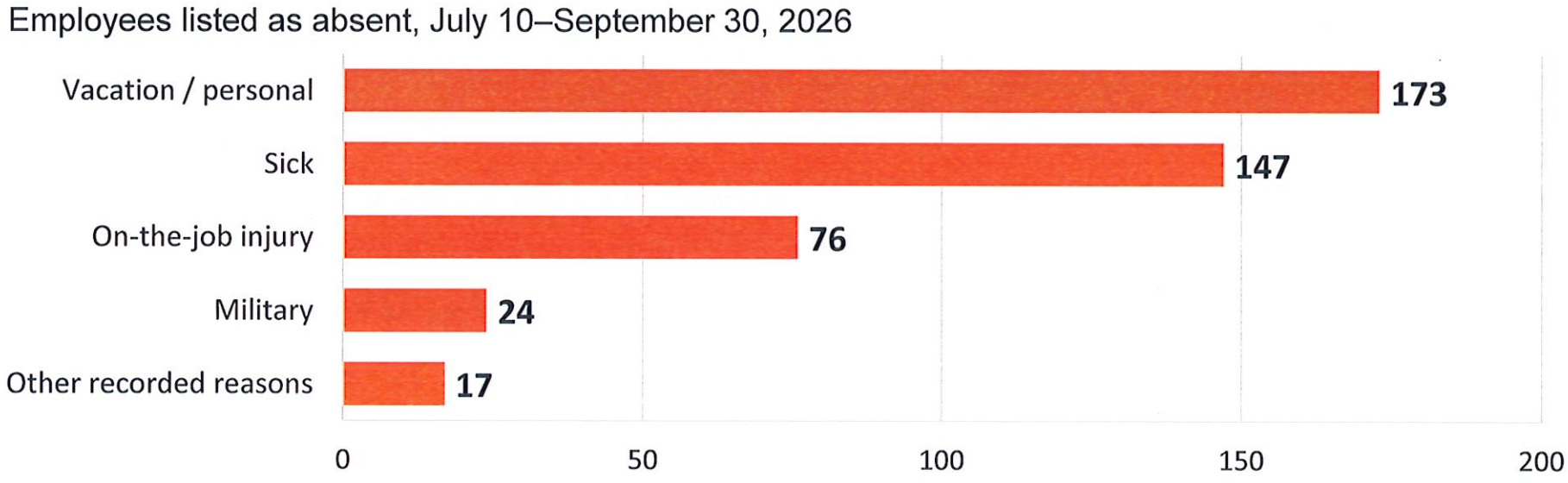
660 hours of workers' compensation leave

4,498 hours of personal/vacation leave

7,693 total hours of leave annually

4. Staffing

Breakdown of leave



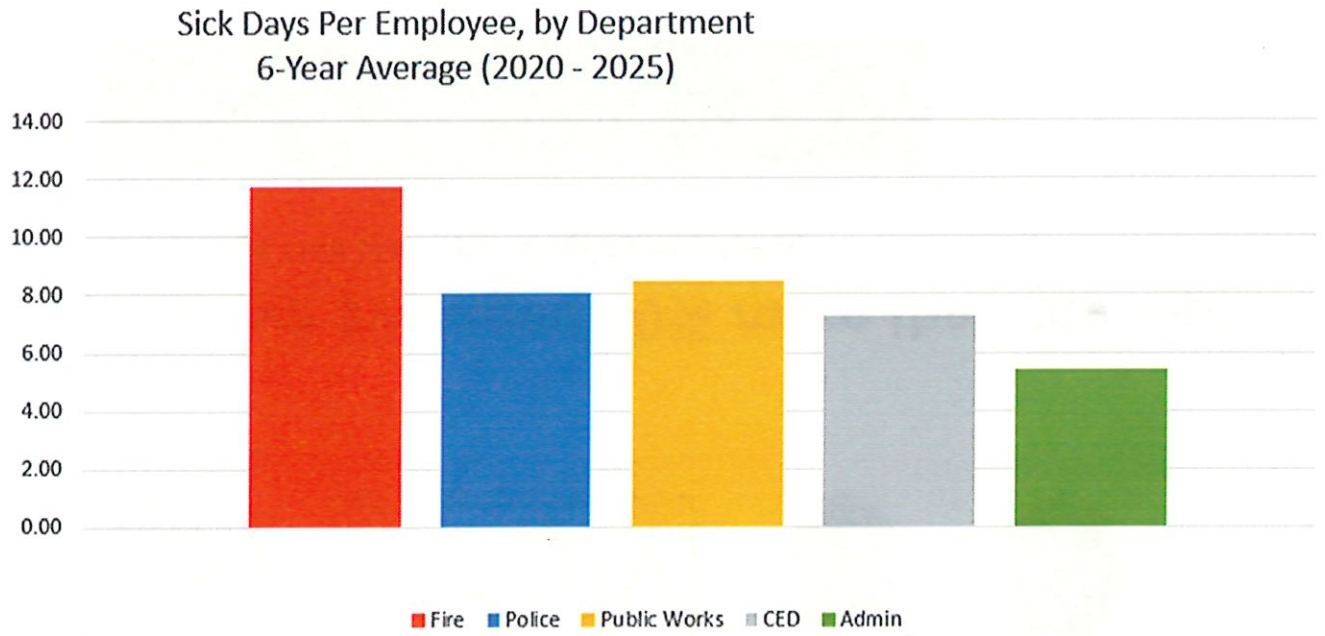
437 listed absences across 166 shifts.

Other: union, training, funeral, birthday and discipline.

Source: City Fire Daily Staffing records before overtime, July 10–September 30, 2026

4. Staffing

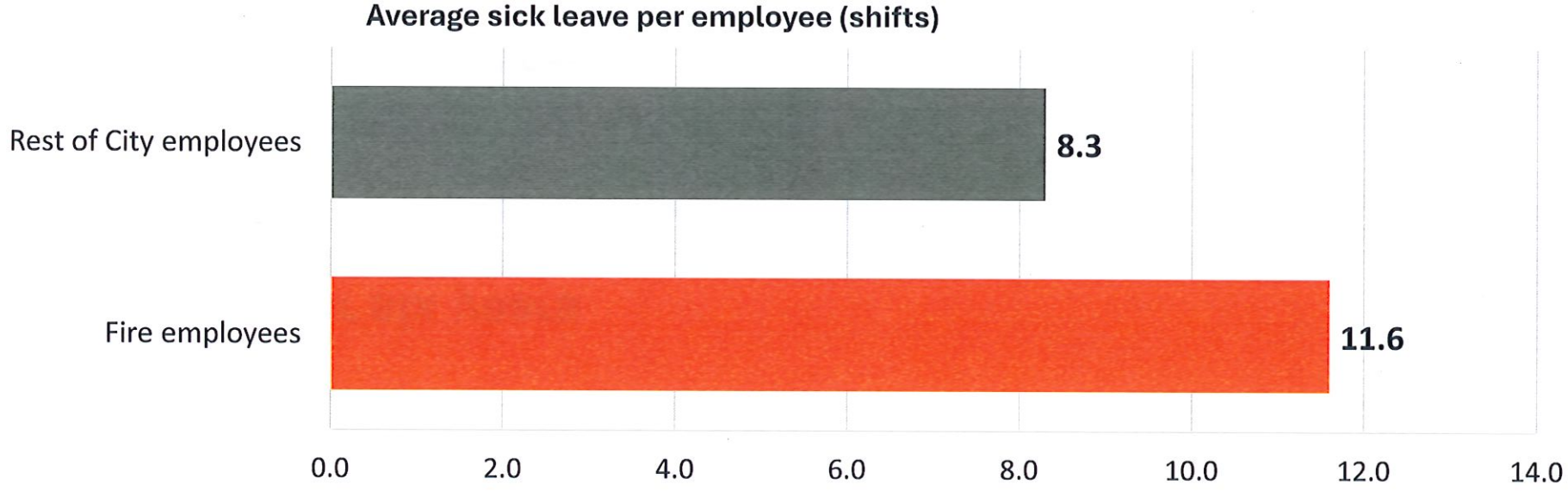
Sick leave over six years



Source: City data

4. Staffing

In 2025 Fire sick leave averaged 40% more than the rest



Matching the City average could recover about 317 shifts annually.

Source: City data



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4. Staffing

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4. Staffing

Scheduling options

The RFP requested scheduling options in the scope of work, understanding that many scheduling options exist in the United States, and the three-platoon system is the most widely used. From Alternative Shift Schedules (page 118):

"If the current 96 operational personnel were retained and redistributed among three platoons, each platoon would expand from the current 24 under a four-platoon system to a maximum of 32 personnel."

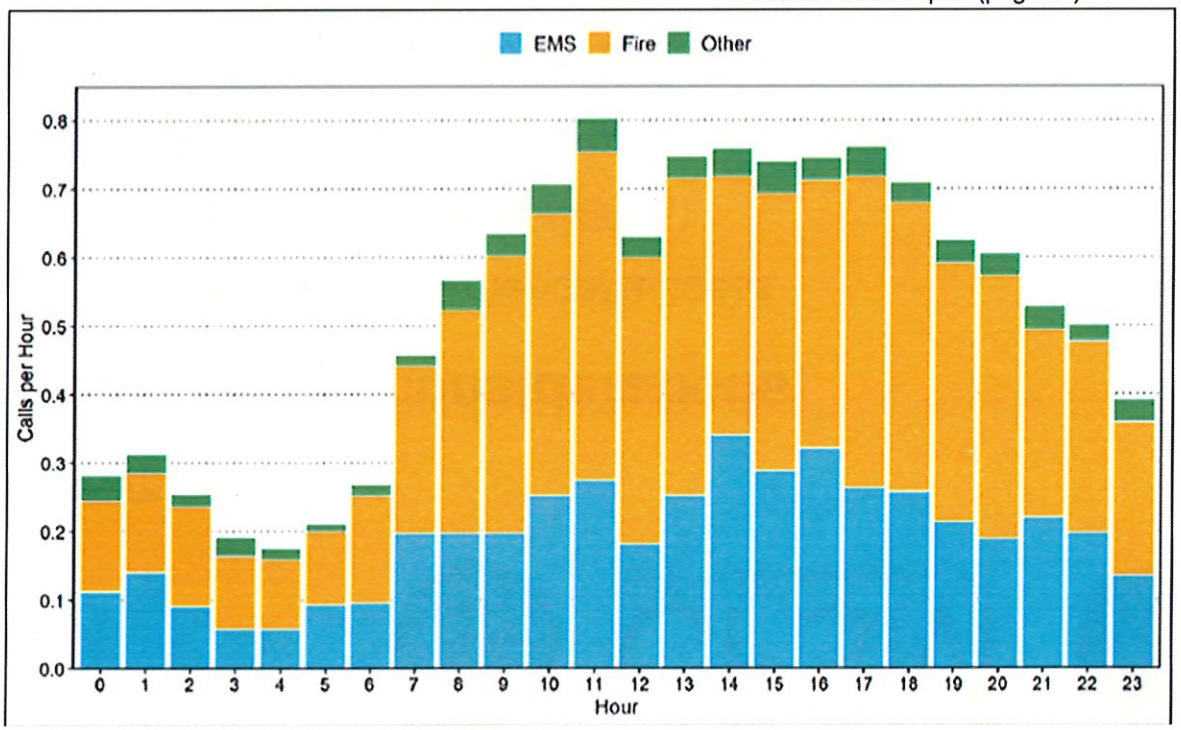
"The additional eight personnel per platoon is the most significant operational benefit of the three-platoon model."

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4. Staffing: Fire calls by hour

FIGURE 7: Average Calls by Hour of Day

Source: Data Report (page 21)



Observations:

- Call demand was lowest between midnight and 7:00 a.m. (averaging about 0.2 calls per hour).
- Call demand rose between 8:00 am and 8:00 pm (averaging about 0.7 calls per hour).



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4. Staffing

CPSM staffing conclusions

Source: Report Conclusion/Nuanced Analysis (page 174)

"A reasonable alternative to an immediate large-scale staffing increase would be a three-part strategy:

- *Maintain or modestly strengthen minimum BFD staffing to ensure the Department can initiate critical fireground tasks independently.*
- *Establish formal automatic-aid agreements, particularly with reliable career-staffed neighboring departments, to provide additional personnel on the initial alarm for multifamily, commercial, industrial, high-rise, and other target hazards.*
- *Focus on additional staffing resources on EMS and peak-demand periods, where the data demonstrate the greatest concurrency and resource depletion."*

4. Staffing

A layered response system

Source: Report Conclusion/Nuanced Analysis (page 174)

"This approach recognizes the reality that Bethlehem cannot *economically staff every conceivable ERF solely with its own personnel, while also avoiding excess dependence on mutual aid for routine emergency response. It creates a layered system in which BFD provides the initial response, automatic aid supplies additional depth, and regional mutual aid provides reinforcement for extended or extraordinary incidents."*

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4. Staffing

Current EMS staffing

Ambulance	Schedule	Location	Paramedics
Medic 1	24/7	419 East 4th Street	2
Medic 7	24/7	201 Dewberry Avenue	2
Medic 6	11am–11pm, 3 days/week	512 West Broad Street	2
Medic 2	8am–8pm, 7 days/week	540 Stefko Boulevard	2

On duty: 4 (24/7), 6 (8am–8pm), 8 (peak)



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4. Staffing

EMS staffing considerations

Source: Recommendations (page 28)

"38. The City of Bethlehem and BEMS consider expanding ambulance staffing to improve resiliency to include:

- *Upgrading the existing 0800-2200 daily peak time ambulance to 24-hour staffing.*
- *Expand the three day/week 1100-2300 surge/peak time ambulance to seven day/week staffing during an appropriate 12-hour peak workload time period.*

4. Staffing

EMS staffing considerations

Ambulance	Schedule	Location	Paramedics
Medic 1	24/7	419 East 4th Street	2
Medic 7	24/7	201 Dewberry Avenue	2
Medic 6	11am–11pm, 3 days/week	512 West Broad Street	2
Medic 2	8am–8pm, 7 days/week	540 Stefko Boulevard	2

On duty: 4 (24/7), 6 (8am–8pm), 8 (peak)

Medic 6: +2 paramedics for 7 days

Medic 2: +4 paramedics for 24/7

4. Staffing

Are our current staffing levels adequate to respond to the number and types of calls we're receiving?

Do our staffing schedules correlate with our community's changing levels of risk throughout the day?

What factors contribute to daily staffing and attendance levels?

City assessment: For Fire, the City's immediate concern is how many employees are available to report for each shift. Sick leave, vacancies and replacement timing affect daily coverage. Leveraging regional aid and/or adding additional positions could increase capacity for major incidents. EMS has resiliency pressures and options are available for peak demand.

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Fire & EMS

Management Assessment and Efficiency Study

Public Safety Committee Meeting

October 20, 2026