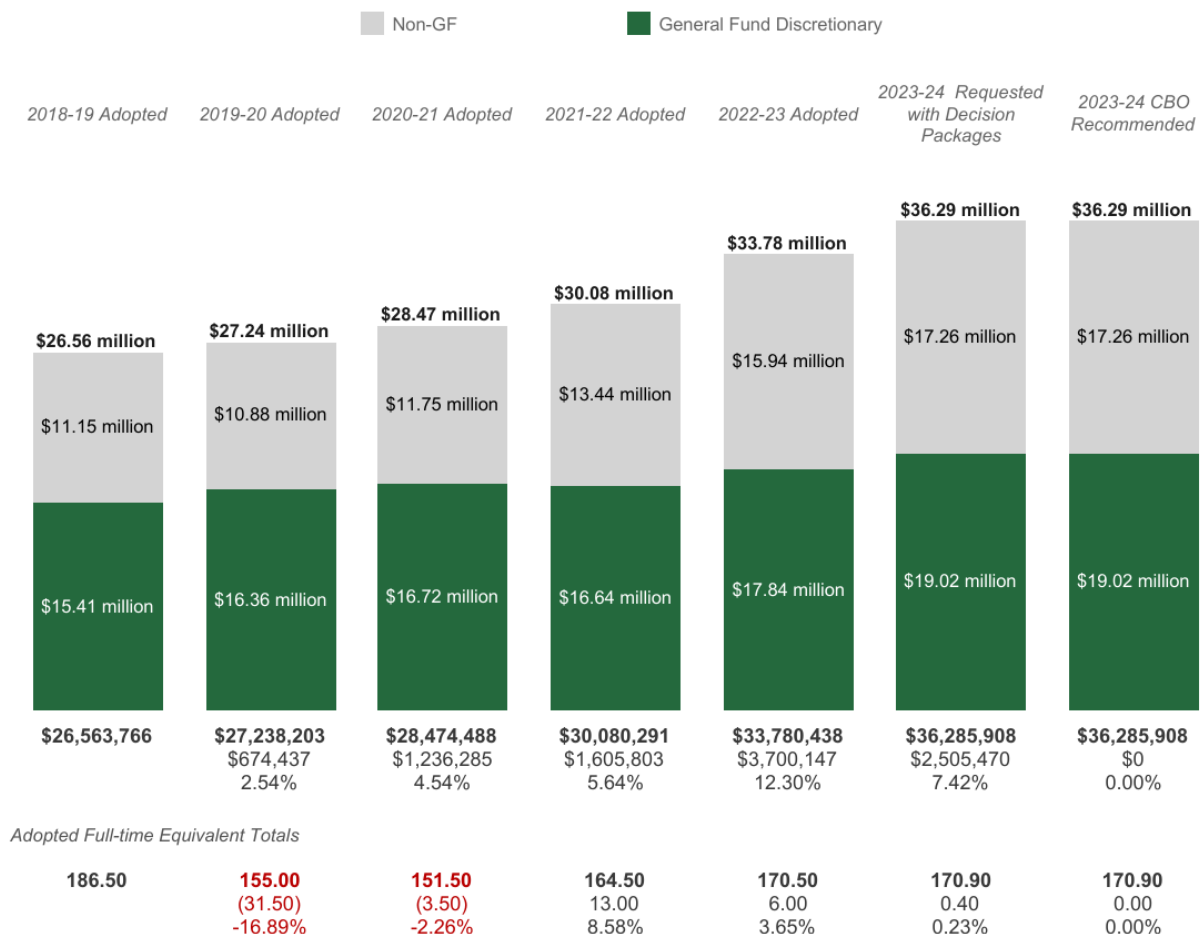




Emergency Communications

Adopted Budget Revenues | 5-Year Lookback



EXECUTIVE SUMMARY

The Bureau of Emergency Communications (BOEC) submitted a requested budget totaling \$36,285,908, a \$2,505,470 (7%) increase over the FY 2022-23 Adopted Budget.

- The budget includes a \$19.0 million appropriation from the General Fund, which is a 7.4% increase over the previous year's adopted budget. General Fund discretionary resources account for 52% of the bureau's requested total resources. 35% of BOEC's requested resources come in the form of external revenue from intergovernmental agencies: \$5.9 million (16%) is State of Oregon 9-1-1 tax revenue and \$6.3 million (17%)

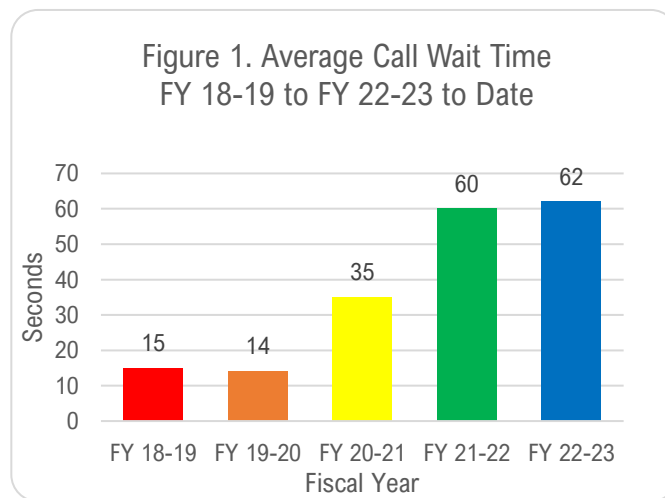
is paid by other jurisdictions that are part of the regional emergency communication system. Nearly 13% of the bureau's requested resources (\$4.6 million) are in a beginning fund balance largely comprised of vacancy savings from prior years that the bureau intends to use to fund a training pipeline.

- In FY 2021-22 issues with which BOEC has long struggled, namely high operational staff turnover, high emergency call volume, and reduced ability to meet call answering standards, reached unprecedented levels, but there is some evidence of relief on the horizon in FY 2022-23, and plans to navigate these challenges.
- The still-expanding 3-1-1 program seems to be providing some relief in non-emergency call volume, as these calls are steadily declining.
- Investments in new technologies are resulting in improved effectiveness and efficiency such as standardized call answering, precision dispatching, enhanced capacity for quality assurance, and automating where possible to free up additional call taker time. However, the bureau's ability to adopt new systems is hampered by implementation delays, and their budget may not be able to absorb escalating costs if they continue to increase significantly.
- The bureau did not submit decision packages and did not request new positions.

BASE BUDGET & KEY ISSUES

Call Volume and Call Wait Times

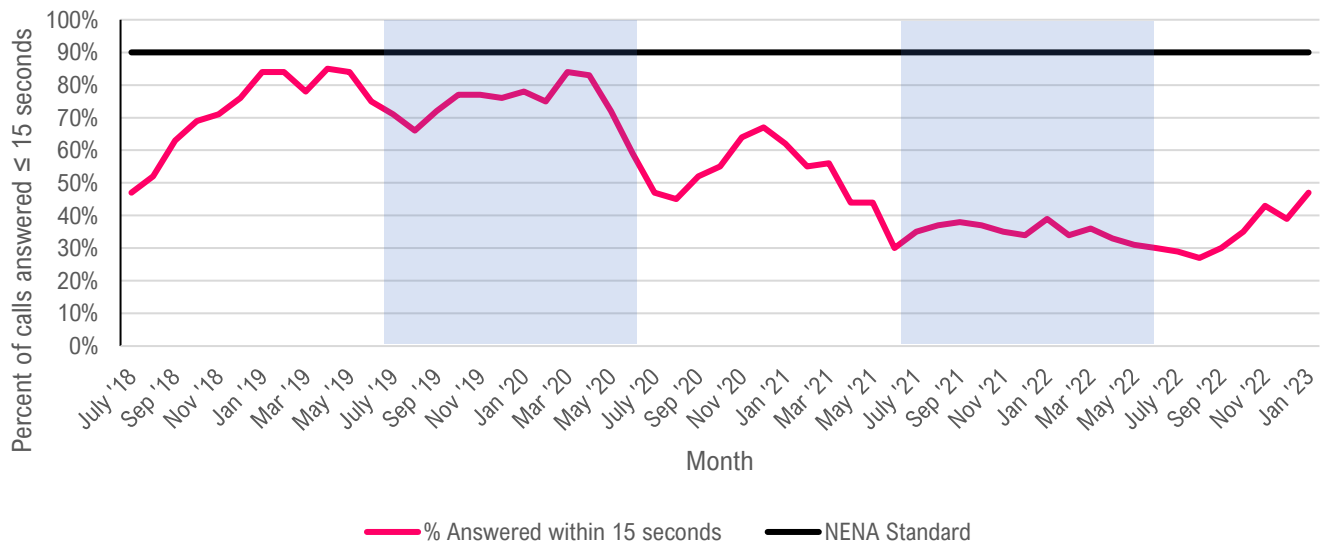
Meeting call answering standards has been a key issue for BOEC in recent years. As can be seen in Figure 1 below, annual average wait times for incoming 9-1-1 calls have lengthened markedly since 2020, and the average 9-1-1 caller now waits more than a minute to have their call answered.



The National Emergency Number Association (NENA) has set a national standard¹ for all public safety answering points (PSAPs) that 90% of all 9-1-1 calls shall be answered within 15 seconds, and 95% of calls should be answered within 20 seconds. In FY 2021-22, BOEC was only able to answer 35% of calls within 15 seconds, and 39% of calls within 20 seconds. Figure 2 illustrates the percent of calls answered within 15 seconds monthly since July 2018.

¹ [NENA 01-002 \(ymaws.com\)](https://www.nenaweb.org/01-002)

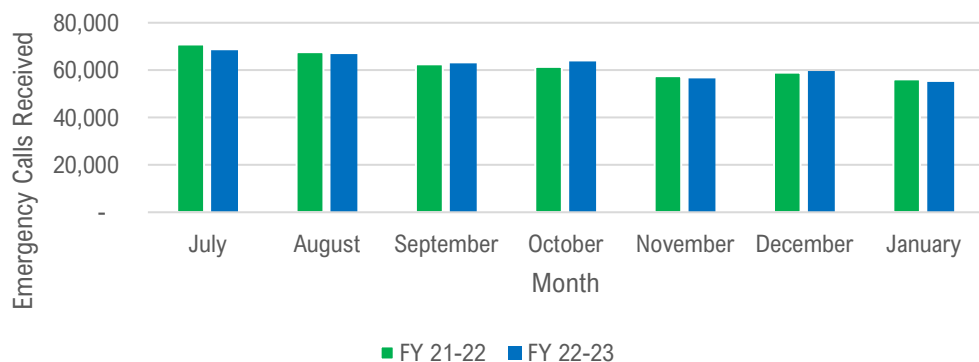
Figure 2. Percent of Calls Answered within 15 Seconds by Month
FY 2018-19 to FY 2022-23 to Date



As can be seen in Figure 2, there has been a slight improvement in call answering speed in recent months. The average wait times for November 2022 through Jan 2023 were 45, 54, and 40 seconds respectively; each more than 10 seconds faster than the same month the prior fiscal year. In fact, prior to this winter, the last instance of monthly wait times averaging less than 55 seconds was in May 2021, so this marks a notable improvement, and hopefully the beginning of a reversal of the slowing trend.

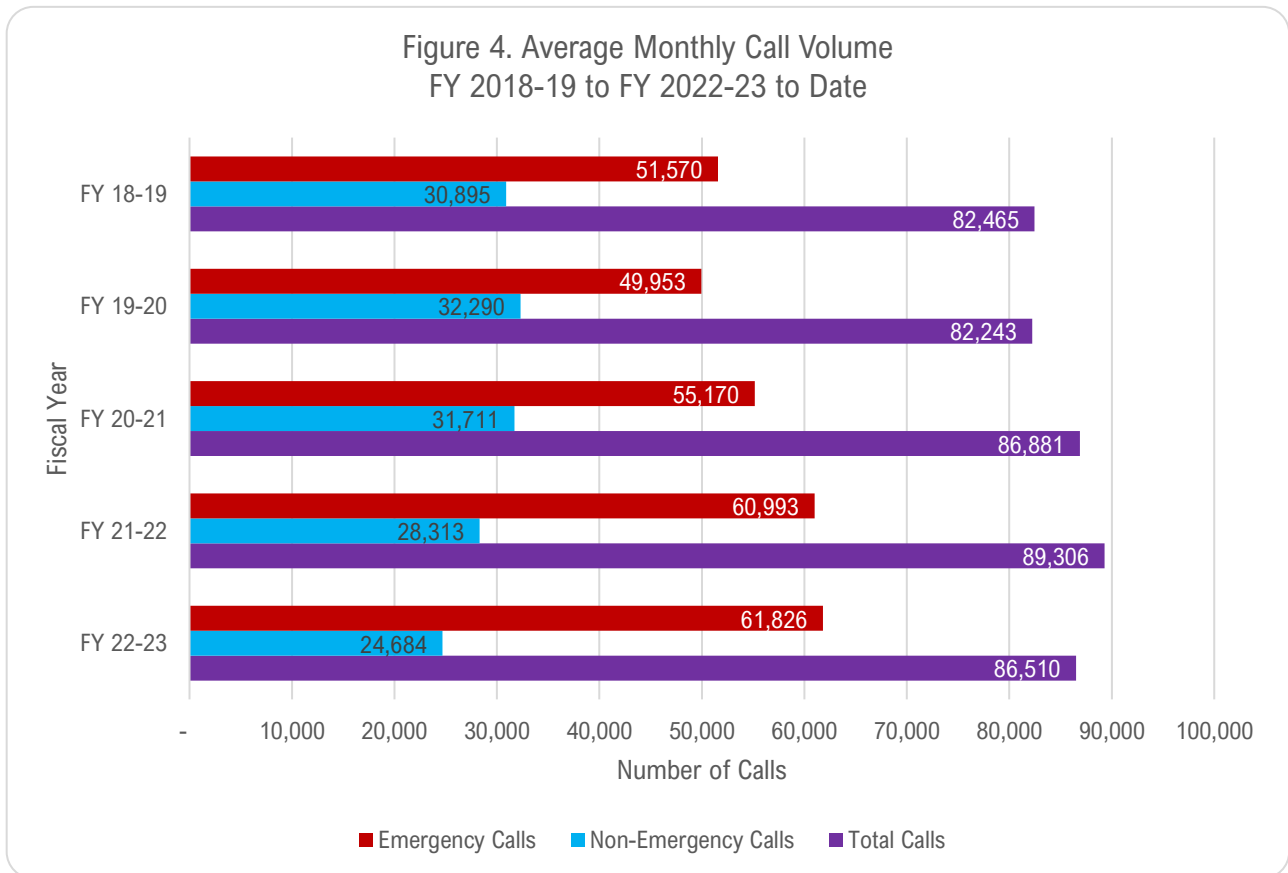
One factor contributing to longer call wait times is an increase in the total number of emergency calls. Beyond the expected variability and typical seasonal fluctuations, there has been a significant overall increase in call volume in recent years. In Fiscal Year 2021-22 BOEC received 731,915 emergency calls, and average monthly calls were 11% higher than in FY 2020-21, which itself was 10% higher than the prior fiscal year. However, there is early evidence that FY 2022-23 may mark a slowing of this trend, as in the first seven months of this fiscal year, there have been 2,054 fewer total emergency calls than during the same seven months of the last fiscal year. Figure 3 below illustrates the comparison of total emergency calls received for the first seven months of FY 2021-22 and FY 2022-23.

Figure 3. Total Number of Emergency Calls Received in First Seven Months of FY 2021-22 and FY 2022-23



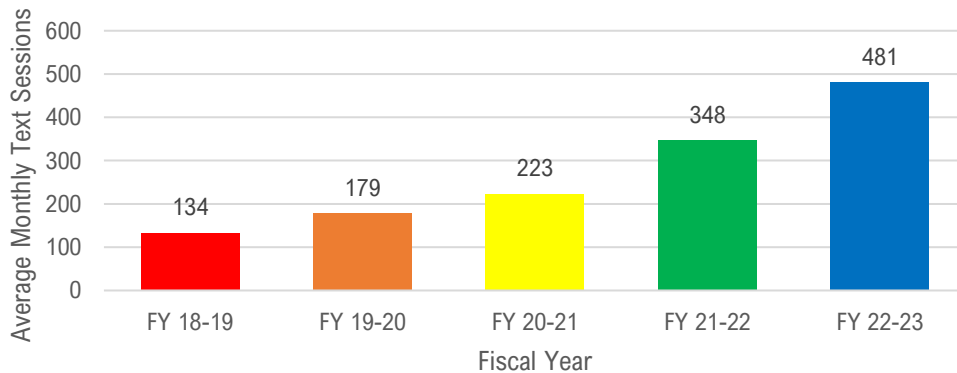
Emergency calls only tell part of BOEC's workload story, as a sizable minority of the calls the bureau fields are for non-emergencies. The number (387,475) and percent of BOEC's total call volume (39%) of non-emergency calls peaked in Fiscal Year 2019-20 and has been declining since. The average number of non-emergency calls received per month in FY 2022-23 from July through January was 24,684; a 24% decline from FY 2019-20's monthly average of 32,290 calls. Even with declining incoming non-emergency calls, in the calendar year 2022, only 50% of non-emergency calls were answered.

Average monthly call volume since FY 2018-19 is summarized below in Figure 4. Please note that in contrast with the prior figure, this includes averages for full fiscal years except for the current year.



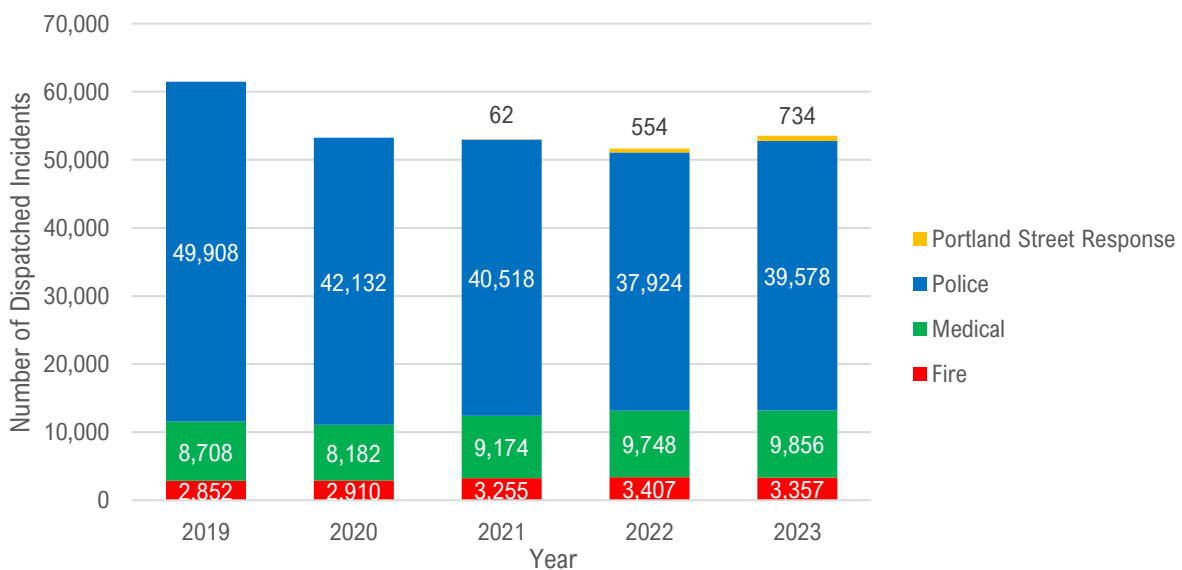
While the rate of increase of emergency call volume shows signs of slowing and the non-emergency call volume continues to decrease, call takers are now responding to an unprecedented number of 9-1-1 texts. In every fiscal year since FY 2018-19, the number of text sessions has increased by double- or triple-digit percentages over the prior year's average. The monthly average number of text sessions for the first seven months of FY 2022-23 reflects a 260% increase over FY 2018-19. Monthly averages since FY 2018-19 are reported below in Figure 5.

Figure 5. Average Number of 9-1-1 Text Sessions per Month
FY 2018-19 to FY 2022-23 to Date



As has been true in recent years, the number of dispatched incidents has not increased in kind when there have been increases in call volume. Figure 6 below summarizes the average monthly number of dispatched incidents for the last five calendar years.

Figure 6. Average Number of Dispatched Incidents per Month by
Responding Agency 2019 to 2023 to Date

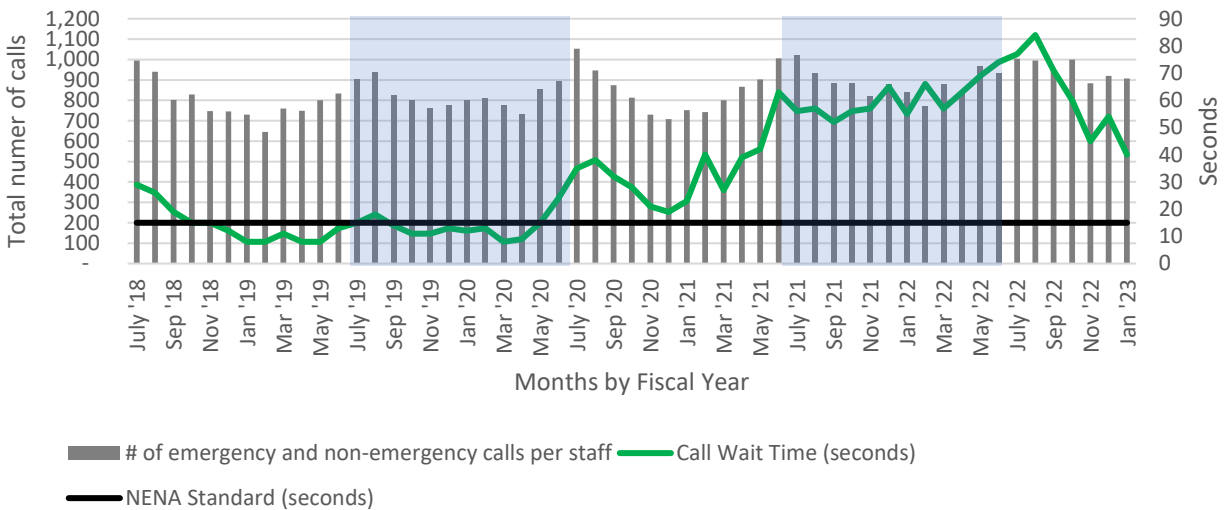


The number of dispatched incidents peaked in 2019, with nearly 100,000 fewer total incidents the following year. It is also worth noting a small but persistent shift in the type of responders dispatched. In addition to a growing proportion of calls dispatched to Portland Street Response (PSR) as it ramps up (in December 2022 PSR dispatch workload had grown to 796, from 111 in January 2022 and comprised 1.53% of total dispatched incidents), a larger proportion of calls is being dispatched to medical and fire, while a smaller proportion of calls is being dispatched to police units.

Staffing

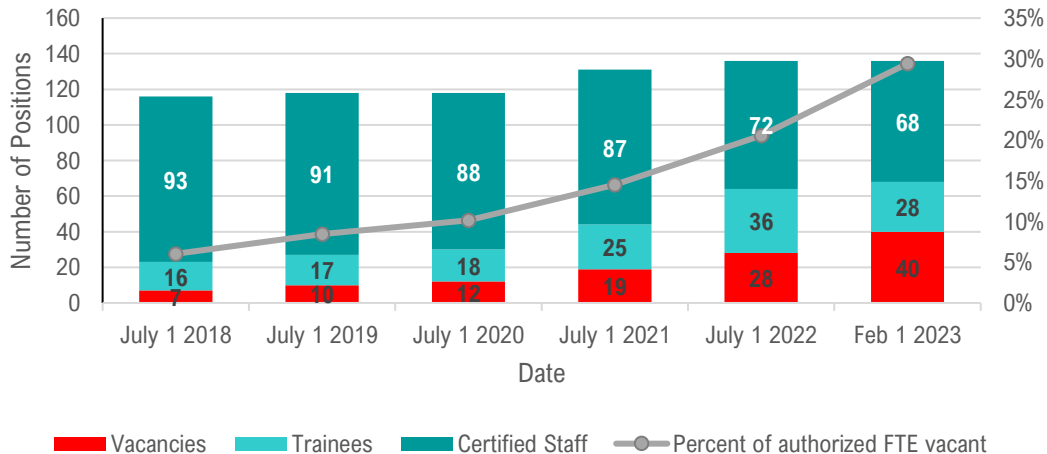
In addition to call volume, the second major variable affecting workload, and therefore call wait times, is the number of qualified people available to answer calls. Scrutinizing the relationship between the number of call takers and call taking performance, there is a moderate correlation between the call taker's workload (the number of emergency and non-emergency calls received per certified call taker each month) and call wait times, as shown in Figure 7, below.

Figure 7. Call Taker Work Load vs. Call Wait Time
FY 18-29 - FY 22-23 to Date



BOEC currently has 136 authorized dispatcher positions (including 5 LTE). As of February 1, 2023, 96 of these were filled (including 28 trainees), which means that 40 (29%) of BOEC's dispatcher positions are currently vacant. Filled positions, vacancies, and their percent of authorized dispatcher positions since the start of FY 2018-19 are shown below in Figure 8.

Figure 8. Authorized Dispatcher Positions
FY Snapshots since July 2018



Vacancies in public safety answering points are especially problematic given the imperative increased workload on remaining operations staff and the long replacement process. When operations staff remains beneath authorized levels, it requires the bureau to backfill hours using overtime—placing a considerable workload obligation on existing staff. The bureau has been able to absorb the overtime costs with vacancy savings. However, increased overtime usage has been linked to high levels of burnout, compounding the turnover issue. Critically, while a Sr Dispatcher can quit with two weeks' notice, replacing them takes approximately two years: the hiring process takes six months (and on average, only 5% of applicants are eligible for hire) and the subsequent training process starts with a 12-week academy after which dispatch trainees begin training on the operations floor with an assigned coach for a minimum of 18 months.

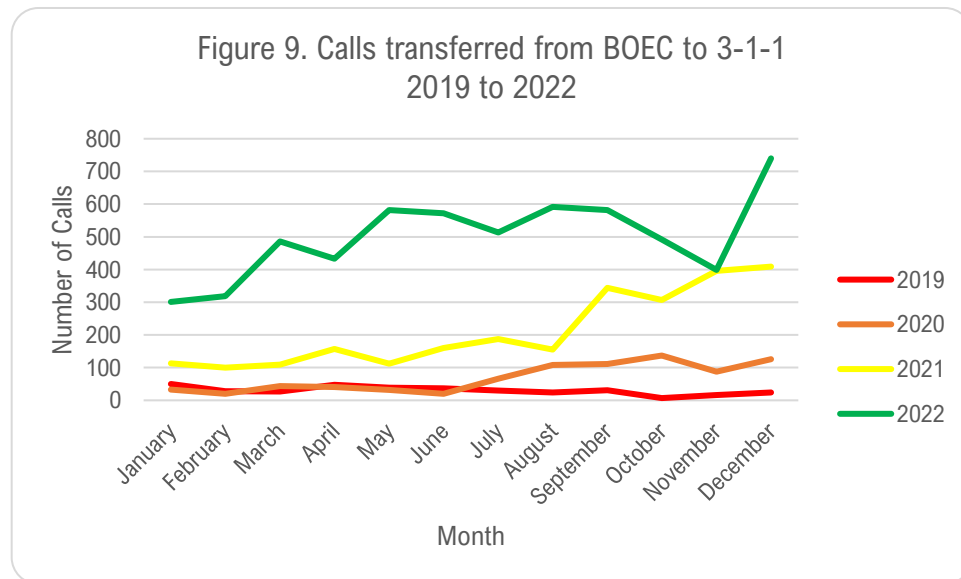
Per a budget note, BOEC included a five-year staffing plan to detail how they will build and maintain a fully staffed operations team. Using a formula that considers current call volume and processing metrics, the bureau projects it needs more than 160 FTE to answer calls within NENA's 15 second standard without the need for overtime. Should current call volume trends persist, or major efficiency gains arise from newly adopted technologies, the assumptions of this projection would need to be revisited. BOEC projects exceeding their currently authorized FTE in FY 2026 and needing 154 call takers by FY 2027 (18 more positions than are currently authorized). Historically, BOEC has hired an average of 20 new trainees per year, but in response to this staffing shortage, the bureau is now hiring much more aggressively. The bureau is on track to hire 32 people by the end of FY 2022-23. BOEC will be mounting the two largest academies they have ever run (with 16 trainees each) in February and May, with the next (smaller) academy tentatively planned for November. BOEC must overcome several significant obstacles to keep such high numbers of trainees progressing, and delays seem very likely. Previous academies have not exceeded 12 trainees, so this larger cohort will seriously test the capacity of BOEC's training and call taking facilities and seems to outstrip the available coaching resources. The bureau will need to devise long-term solutions to any emergent training constraints, because to reach full staffing and begin to build a more sustainable training pipeline, the bureau estimates that they will need to continue hiring 32 new trainees per year.

To fund this hiring, BOEC has created a training pipeline sub-fund which will allow the bureau to repurpose its vacancy savings to hire above the current authorized FTE to allow for the time needed to certify dispatchers as the bureau faces normal turnover. At the hiring and separation rates BOEC projected, this training pipeline is only sustainable through FY 2026-27, so the bureau will have to work on a longer-term solution. While the bureau is pursuing a very ambitious hiring schedule, it also understands it needs to prioritize retention. However, the bureau's dispatcher staffing model assumes a separation rate of 6 dispatchers per year, while in the last three years they have lost an average of 12 certified call takers annually. If separation rates do not slow as BOEC assumes, it will take longer to become fully staffed than the bureau projects.

Initiatives to Reduce Call Volume Improve Response

One of BOEC's strategic initiatives is to decrease non-emergency calls by 40% with the implementation of 3-1-1. It is impossible to fully quantify the impact of 3-1-1, but given the decreasing number of non-emergency calls described above (and summarized in Figure 3), it may already be having an impact. Non-emergency calls decreased 11% from FY 2020-21 to FY 2021-22 and that decline is persisting in FY 2022-23. Additionally, total transfers from BOEC to 3-1-1 have increased from 361 in 2019 to 6,011 in 2022. The significant growth

in these transfers is evidenced below in the monthly data for the last four calendar years in Figure 9.



BOEC implemented ProQA software and the Integrated Priority Dispatch Systems (IPDS) in May 2021. Use of the Medical and Fire Priority Dispatch Systems has lengthened call processing time a few seconds, but it has standardized medical and fire call taking and allowed more precise and accurate responses. As hoped, it has enabled more efficient use of partner agency resources. For example, before the implementation of IPDS, Portland Fire and Rescue responded on more than 80% of all medical calls. Since implementation that number has dropped to nearly 60%, better optimizing use of critical fire resources.

In addition, efficiencies from two recently implemented technologies have led to gains of approximately two hours of call taker availability each day. Caller-disconnected calls, those that are hung up prior to answering, constitute a significant proportion of incoming calls, comprising an average of 20% of total 9-1-1 calls from December 2021 to December 2022. These are mostly unintentional and often caused by cell phone pocket dials. However, each abandoned call requires follow up, utilizing valuable call taker time. To address this issue, BOEC has been working since 2020 to implement an Automated Abandoned Callback (AAC) system, and this was finalized in May 2022. Since June 2022, AAC has reduced the number of calls requiring call taker call-back by an average of 26%, and the average initial call-back time has dropped an impressive 74% from 2 minutes 52 seconds in December 2021 to 45 seconds in December 2022. BOEC estimates that AAC frees up 20-40 hours each month for call takers. BOEC also concluded implementation of Automated Secure Alarm Protocol to Public Safety Answering Point (ASAP to PSAP) in December 2022. This software allows alarm companies to interface with the bureau's Computer Aided Dispatch (CAD) so that information is delivered directly to the CAD system digitally, reducing the time required of BOEC call takers. In its first month of implementation, ASAP to PSAP is processing an average of 47% of alarm calls, freeing up nearly an hour per day for call takers to answer other calls.

To further streamline call taking, BOEC will soon begin testing a technology called Versaterm CaseService to automate its existing non-emergency phone tree.

Reliance on One-time Funds

BOEC currently has \$1,156,341 in unspent one-time funds, all of which were received for hiring operations staff. Unfortunately, due to this year's extraordinary number of separations, the bureau has not yet been able to utilize any of these one-time funds.

- In an amendment in the 2021 Fall BMP, the bureau received \$95,500 to add a dispatcher for Portland Street Response. With the high turnover in Sr Certified Dispatchers, a dedicated PSR dispatcher position has not yet been created, but once the bureau reaches a minimum police dispatcher position, this position is still needed to serve the growing PSR response. These funds have been put into contingency for the training pipeline.
- In a decision package in the 2022 Fall BMP, BOEC received \$213,610 in General Fund discretionary resources for Emergency Communications Training Supervisors. With the high turnover in Sr Certified Dispatchers, it has not been possible to create these positions as they would be filled by current staff. The funds have been placed in contingency as the bureau still sees this as a great need once it gets to minimum staffing levels.
- As an addition in the 2023 Adopted Budget the bureau received \$847,231 for additional LTE Emergency Dispatcher Positions. These positions have not been filled, but the funding has been put in contingency with the intent to utilize them in the training pipeline once the bureau reaches full staffing.

Staffing has been a chronic issue at BOEC, but the current situation is acutely problematic. While relying on one-time funds for ongoing staffing needs presents a financial sustainability issue, BOEC's 5-year staffing plan, which optimistically assumes substantially lower attrition rates than they currently have, indicates that they should be able to rely on their current funding model through 2025-26.

DECISION PACKAGE ANALYSIS

None Submitted

CAPITAL IMPROVEMENT PLAN

BOEC budgeted \$1,340,845 for two capital projects, flagging a further \$880,000 for an additional project (recurring CAD server upgrade) over the next five years.

For the first of these projects, BOEC has budgeted \$840,845 to implement a Next Generation 9-1-1 Recording System. Revenues for this project are made up of Public Safety Project reserves, BOEC fund balance, and partner agency contributions. This project was initially funded as part of \$1.6 million received in FY 2018-19 to implement both the Next Generation 9-1-1 recording system and the Integrated Priority Dispatch System. As discussed above, IPDS was fully implemented in May 2021. This project is now in the improvement and maintenance phase, with the current contract expiring in July 2025. However, BOEC is currently awaiting implementation of its Next Generation 9-1-1 call logging system. Recommended by a consulting group as part of a staffing study and made an action item in the August 2017 GATR session, it was subsequently approved in the FY 2018-19 budget. This upgrade is necessary for a successful quality assurance program and should help expedite the fulfillment of public record requests. However, adoption has been delayed due to the lack of available BTS resources. BTS has indicated that the earliest they can begin implementation is June 2023 and estimated that implementation would take six months to complete. Until the Next Generation 9-1-1 recording system can be brought online, BOEC must spend \$68,000 every six months to support the legacy system.

The second capital project included in the FY 2023-24 requested budget is \$500,000 for a phone system upgrade. Revenues for this project are made up of Public Safety Project reserves, BOEC fund balance, and partner agency contributions. Every four to five years the phone system requires an upgrade that is partially funded by the state. The next upgrade is scheduled for FY 2023-24.

Recently BOEC has been leading discussions with its user agencies regarding funding models for capital projects and will be drafting a memorandum of understanding in coming months to codify how capital projects are selected and funded.

FIVE YEAR FINANCIAL PLANS

BOEC's five-year plan largely continues the bureau's current course. The most notable departure from recent budgets is that the bureau plans to aggressively hire and train larger cohorts of new call takers, which will lead to the spending down of its sizable accumulated vacancy savings. Once this resource is depleted, alternative ongoing funding will need to be secured. Sources of uncertainty in their five-year plan include significant shortages of certified staff to coach trainees which may impede timely training, optimistic assumptions about future turnover, upcoming labor negotiations, facilities constraints, and unpredictable and ballooning technology costs and timelines.

SUMMARY OF REQUESTS & RECOMMENDATIONS (ALL FUNDS)

Bureau of Emergency Communications

		2022-23 Adopted Budget	2023-24 Requested Base (A)	Bureau Decision Packages (B)	CBO Recommended Adjustments (C)	Total Recommended Budget (A+B+C)
Revenue	Miscellaneous	\$23,596	\$49,026	\$0	\$0	\$49,026
	Intergovernmental	\$12,162,011	\$12,193,819	\$0	\$0	\$12,193,819
	Fund Transfers - Revenue	\$17,841,747	\$19,024,702	\$0	\$0	\$19,024,702
	Charges for Services	\$443,301	\$456,600	\$0	\$0	\$456,600
	Beginning Fund Balance	\$3,309,783	\$4,561,761	\$0	\$0	\$4,561,761
Revenue	Sum:	\$33,780,438	\$36,285,908	\$0	\$0	\$36,285,908
Expense	Personnel	\$23,165,262	\$22,131,777	\$0	\$0	\$22,131,777
	Internal Materials and Services	\$5,433,572	\$6,034,653	\$0	\$0	\$6,034,653
	Fund Transfers - Expense	\$1,180,905	\$1,242,303	\$0	\$0	\$1,242,303
	External Materials and Services	\$2,044,526	\$2,105,861	\$0	\$0	\$2,105,861
	Debt Service	\$323,478	\$336,414	\$0	\$0	\$336,414
	Contingency	\$0	\$3,094,055	\$0	\$0	\$3,094,055
	Capital Outlay	\$1,632,695	\$1,340,845	\$0	\$0	\$1,340,845
Expense	Sum:	\$33,780,438	\$36,285,908	\$0	\$0	\$36,285,908