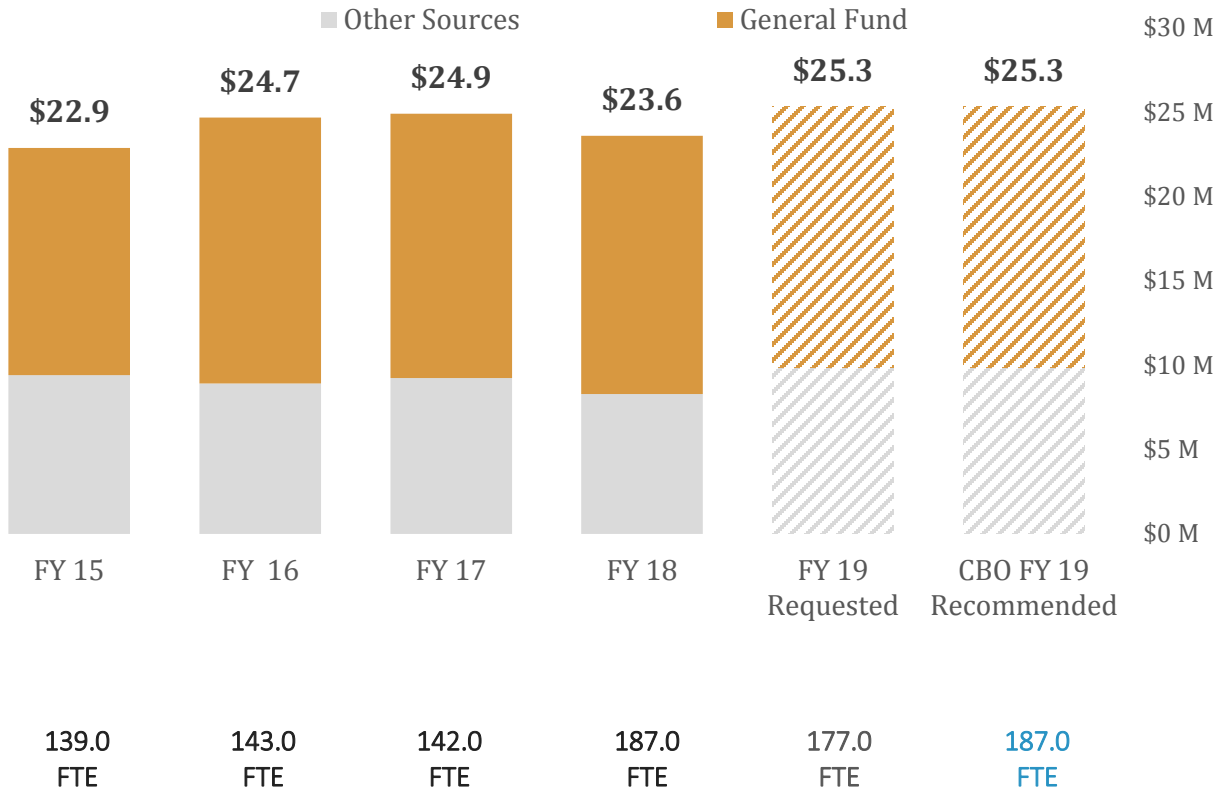
City Budget Office

Bureau of Emergency Communications

Analysis by Robert Cheney

Adopted Budget Resources: 5-Year Lookback



INTRODUCTION

The Bureau of Emergency Communications (BOEC) budget is 66% personnel costs ($16.6 million) and 24% materials and services ($5.8 million). To comply with budget guidance directing bureaus to develop 5% reduction options, BOEC has proposed to reduce funding by cutting its emergency communications operations staff by 11 senior dispatchers, for a total General Fund reduction of $763,755. The bureau has also put forward packages that request funds from the Public Safety Project reserves to revitalize its technological capabilities. A cut to the personnel budget at a time when the bureau is making efforts to reach full staffing would negatively impact service levels related to 9-1-1 call taking and dispatching. Therefore, CBO is not recommending the reductions. CBO is recommending the requested technology investments.

KEY ISSUES

The Bureau of Emergency Communications (BOEC) is an organization undergoing significant change. After a Government Accountability Transparency and Results (GATR) session in August, the bureau was tasked by Mayor Wheeler to revamp its performance management system, address issues in operations and mitigate issues with staff attrition. This has been its charge under the Interim Director while a nationwide search has been conducted for a permanent director.

Concurrently, Multnomah County has been accepting bids for its next emergency ambulance services contract. This proposal originally requested that the vendor provide a separate 9-1-1 call center capable of triaging low- and high-acuity calls. After discussions between the City and Multnomah County regarding the challenges of having adjacent, duplicative call-taking centers, the request was revised and the charge of triaging calls has been placed under the purview of BOEC.[1]

Increasing Staffing to Authorized Levels

BOEC's issues with staffing are well-documented. Emergency Communications Operations staff remains beneath authorized levels, requiring the bureau to backfill hours using overtime—placing a considerable workload obligation on existing staff. The bureau is able to absorb the overtime costs with vacancy savings. However, increased overtime usage has been linked to high levels of burnout, compounding the attrition issue.

Table 1. BOEC Staffing Analysis, Budgeted to Actual (as of January 2018)

Authorized Staff	
Call Takers	10
Senior Dispatchers	108
Total	**118**
Actual Staff	
Call Takers (not working on any dispatcher certification)	5
Call Takers (working on police dispatch certification)	6
Call Takers (with police dispatch certification)	14
Senior Dispatchers	68
Working Retirees	4
Total	**97**
In Pipeline	
Trainees working on call taker certification	9
Trainees in Basic Academy	7
Total	**16**

The high-stress nature of emergency communications work means that for many it is not a life-long career. Sudden and unforeseen resignations are a reality of the industry and BOEC is no exception. The frequency of these types of separations creates management challenges.

A three-year average showed that BOEC has an attrition rate of 15%—lower than the national turnover rate for dispatchers, which hovers at 17–19%.[2,3] While a below-

[1] https://multco.us/multnomah-county/news/multnomah-county-amends-ambulance-request-proposals
[2] From the Matrix Consulting Group. "Staffing Study and Plan for the Bureau of Emergency Communications." April 2017. P. 37
[3] For context, the State and Local Government attrition rate was 18.8% in 2016. https://www.bls.gov/news.release

average attrition rate might indicate future staff retention success, it does not capture the challenges of replacing separated staff members.

BOEC, like many Public Safety answering points, cannot replace staff as quickly as they separate. While it might only take weeks for a senior dispatcher to separate from the bureau, it can take anywhere from 14 to 18 months to replace them due to the amount of time needed to train and certify new 9-1-1 call takers and dispatchers.[4] This underscores the need for keeping trainees in the pipeline.

Beyond the challenges of unplanned separations, planned separations are becoming a growing challenge for achieving full staffing. BOEC currently employs four working retirees, and has 19 senior dispatchers that can retire in the next four years including 12 that are eligible to retire at any time.

These issues with attrition underscore the need for ongoing recruitment. The bureau has acknowledged this by increasing training academies from two to three per year. Each academy projects to net anywhere from 6 to 10 EC Ops staff per cycle. Accounting for a 15% attrition rate and assuming an optimized 50% occupancy rate, the bureau projects to be on a glide path to full staffing after they graduate a third academy in early 2019.[5]

Table 2. BOEC EC Ops Retiree Separation Outlook (as of February 2018)

Currently eligible to retire	12
Eligible to retire in 1 year	1
Eligible to retire in 2 years	1
Eligible to retire in 3 years	3
Eligible to reitre in 4 years	2
Projected Retiree Separations over Next Four Years	**19**

To mitigate the time-intensive nature of developing an emergency communications operator, the bureau deploys trainees as limited-term call takers immediately upon call-taker certification. Management has expedited this process by making the certification process serial rather than concurrent, so trainees are certified as call takers *first* before moving on to police and fire/medical dispatch certification. This allows the bureau to extract value from trainees sooner while hastening the overall certification process.

Keeping up with Technological Advances in Emergency Communications

BOEC recently used capital funds to upgrade their computer-aided dispatch system (CAD).[6] However, industry standards are rapidly evolving and BOEC has fallen behind

[4] This variance is based on several factors including operating conditions, scheduling availability and individual training performance.

[5] The 50% Occupancy Rate describes an optimized rate at which staff should be performing core dispatcher-related functions (Ideally, a dispatcher should be working 30 minutes for every hour.) The remaining 30-minute balance represents a "down time" allowance optimized for professions that require extreme concentration during work activities. Studies show that occupancy rates above 50% have an outsize impact on "burn-out" and thus, employee turnover.

[6] From the Matrix Consulting Group. “Staffing Study and Plan for the Bureau of Emergency Communications.” April 2017. P. 67

in several technological areas.

Recording System

BOEC currently utilizes a non-industry-specific Pyxis 5 recording system that was installed in late 2002. This platform was designed for the audio-visual editing profession and was not intended to be used for public safety recording purposes.[7] Bureau staff state that the software is difficult to use and has been modified to meet the needs of the bureau. This creates challenges in pulling data for public records requests and Quality Assurance efforts. The bureau has proposed a budget package to replace this system; details are analyzed in the decision package section below.

Dispatch Technology

Historically, all 9-1-1 calls were met with an emergency response to avoid undertriage.[8] With the advancement of caller interrogation, call takers and dispatchers developed the ability to triage calls and provide pre-arrival care guidance. Since then, technology has been developed that can guide dispatchers electronically using software that integrates with CAD systems to auto-populate data fields instead of relying on manual—and often redundant—data entry. The software also displays interrogation prompts and pre-arrival care guidance based on conditions selected.

Currently, however, BOEC call takers use analog "flip cards" that contain sequential questions based on caller response to determine call acuity and pre-arrival care guidance. This creates challenges for EC Operations staff as they are relied upon to interpret and enter information manually. Because of this, service levels are impacted by call taker experience and proficiency in using the flip cards.

Technology Effects on Morale

A survey conducted by the Matrix Consulting Group found that only 57% of BOEC staff agreed that they had have the proper tools and technology to do their jobs. This figure aligns with another question that discovered that 57% of employees felt that poor equipment is a factor negatively impacting staff morale.[9]

Technology Improvement Cost Allocation

In all, BOEC has several large-scale technology projects that are critical to service delivery. CBO believes there is logical and legal support for partner jurisdictions to contribute financially to BOEC assets and maintenance.

The 1995 BOEC Intergovernmental Agreement (IGA) established that Portland would retain ownership of the bureau's capital assets and—with minor exceptions—subsequent capital expenditures. [10] To date, all BOEC capital projects have been paid

[7] Matrix Consulting Group. P. 68.
[8] Hinchey, Paul. Myers, Brent. Zalkin, Joseph. Lewis, Ryan. Garner, Jr., Donald. "Low Acuity EMS Dispatch Criteria Can Reliably Identify Patients without High-Acuity Illness or Injury." Prehospital Emergency Care. Volume 11, Number 1. January/March 2007. P 42–48
[9] Matrix Consulting Group. P. 69
[10] Ordinance No. 169468 "Authorize an Intergovernmental Agreement between the City of Portland, Multnomah County, Cities of Gresham, Troutdale, Fairview, Wood Village and Maywood Park, Multnomah County Rural Fire

for by the City.

However, language in the IGA suggests that partners can reasonably expect to contribute to capital expenditures necessary for operations. The IGA states "The [BOEC] budget will include the total costs of [BOEC] operations […] the Jurisdictions will provide resources sufficient to fund the budget."[11]

The City Attorney notes, however, that the Performance Agreement between the City of Portland and BOEC user jurisdictions described in the IGA has not been executed, which may reduce the City's legal footing to demand reimbursement of capital costs.[12] The City Attorney has advised that the City of Portland discuss upcoming costs with partner jurisdictions and seek agreement about the share of estimated costs for which they are willing to pay.

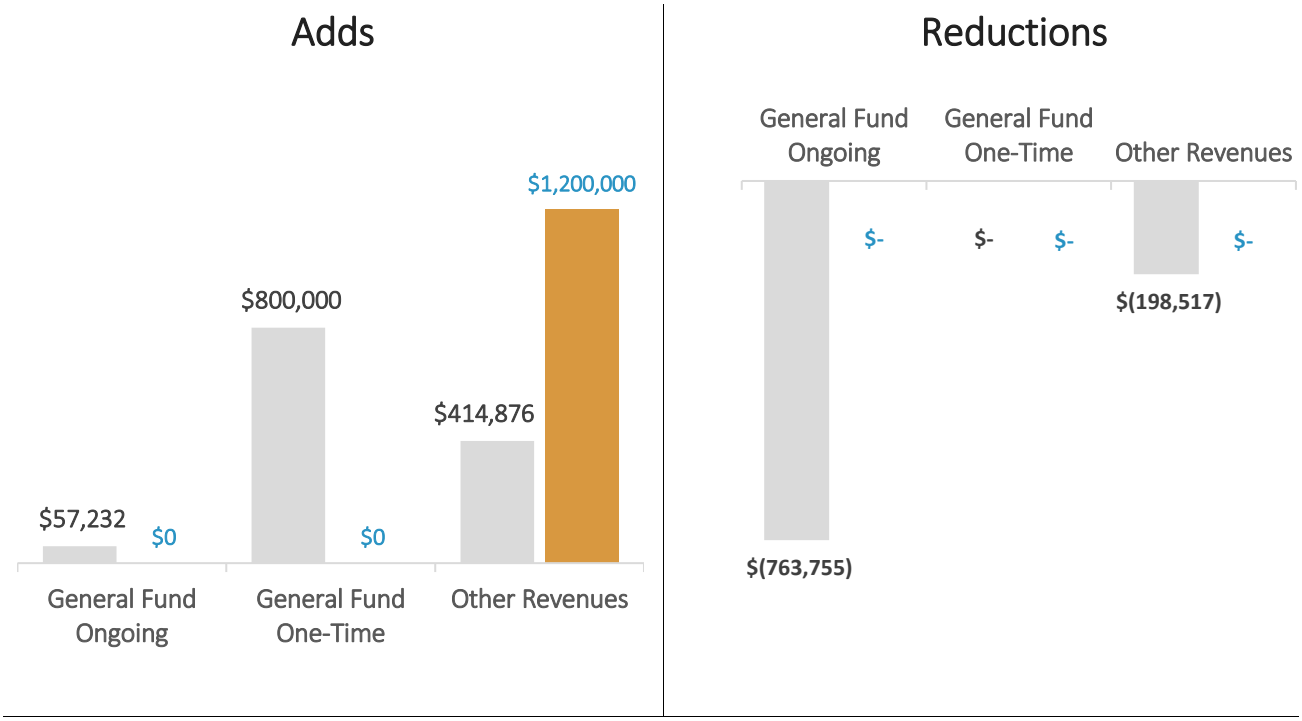
CBO recommends that beginning with the FY 2018–19 budget process, BOEC ask its partner jurisdictions to contribute according to the shared cost formula currently used to assign operations costs. The expense of each capital request could be shared according to the same shared cost formula used to assign operations expenses, which is based on jurisdictional population. For context, in FY 2017-18, the City of Portland paid 78.94% of operations costs, and all other jurisdictions together pay 21.06%. This breakdown has been employed in the ensuing recommendations.

Protection District 14 (Corbett) and Sauvie Island Fire District No. 30 for the provision of emergency call receiving and dispatch services by the Bureau of Emergency Communications (Ordinance)" Section 2 (2). P. 4. City of Portland. November 15, 1995. http://efiles.portlandoregon.gov/Record/2456224/

[11] Ibid. Section 8 "Budget" pp. 8-9. http://efiles.portlandoregon.gov/Record/2456224/

[12] Ibid. Section 5 "Performance Agreements" p. 8 http://efiles.portlandoregon.gov/Record/2456224/

DECISION PACKAGE ANALYSIS AND RECOMMENDATIONS



1.0 FTE Requested	0.0 FTE Recommended	(11.0) FTE Requested	0.0 FTE Recommended

Next Generation Recording System

EC_06; 9-1-1 Next Generation Recording System; $450,000; 0.00 FTE

This package is brought forward in response to the Matrix Consulting Group's recommendation that BOEC institute a Quality Assurance and Quality Improvement (QA/QI) system following the APCO/NENA[13] "Quality Assurance and Quality Improvement Program for PSAPs" standard and make QA/QI a priority within the agency. Additionally, this recommendation was included as an action item from the August 2017 GATR session. This package addresses the Mayor's Guidance relating to ensuring public safety and police accountability and is likely to impact the percentage

[13] APCO is the Association of Public Safety Communications Officials. NENA is the National Emergency Number Association. The two organizations collaborated to create American National Standard (ANS) 1.107.1-2015: Standard for the Establishment of a Quality Assurance and Quality Improvement Program for Public Safety Answering Points.

of 9-1-1 emergency calls answered within 20 seconds.

A Quality Assurance program involves reviewing an industry best practice of at least 2% of phone calls and evaluating them against an APCO-created scorecard. The scorecards examine interrogation questions, CAD skills and protocol compliance. These score cards are then evaluated by a supervisor and used to improve the quality of response by identifying and addressing gaps in performance.

BOEC does not currently conduct any Quality Assurance or Quality Improvement efforts in large part due to the cumbersome and time-intensive nature of pulling call data from the aforementioned Pyxis 5 recording system. A new recording system designed for Public Safety Emergency Communications would streamline the process of retrieving call recordings for evaluation. Adding this data-gathering capacity would provide BOEC with another tool to evaluate call taker and dispatcher compliance. The program would also provide the bureau a mechanism to offer timely and precise feedback to staff while supporting coaching and training efforts with targeted areas for improvement.

BOEC is mandated by state policy to keep recordings of all calls for at least 2 years.[14] The current Pyxis system has failed at intermittent points since its installation, resulting in the permanent loss of call recordings needed for various community, media and legal needs. A new recording system would bring BOEC into compliance with state policy in this regard.

The bureau currently deploys two OSS IIIs for research and public records requests and billing. These 2.0 FTE spend most of their time handling these requests, which average over 7 per day. Still, the bureau struggles to meet the 15-business day turnaround requirement for paid public record requests mandated by the City Attorney. A new recording system would make the data pulling process less cumbersome—expediting the process and bringing the bureau into compliance.

Lastly, as methods of emergency communications change, so does the need to capture and store them. The bureau currently has “text to 9-1-1” capabilities and receives about 1100 interactions per year (compared with 522,000 phone calls). However, an Arizona court has already ruled that lack of access to 9-1-1 services via text discriminates against the deaf and hearing-impaired community. This ruling portends the expected proliferation of “text to 9-1-1.” A next generation recording system will ensure the bureau has the capacity to capture, retain and retrieve these interactions going forward and remain in compliance with public records law.

CBO recommends this package, but suggests that it receive its funding from the Public Safety Project reserves managed by the Bureau of Technology Services. Additionally, the City should seek funding from partner jurisdictions in proportion to their contribution to operations.

[14] Oregon Administrative Rules 166-150-0145. County and Special District Retention Schedule; 9-1-1/Public Safety Answering Point Records.

CBO Recommendation: $450,000 | 0.00 FTE

Integrated Priority Dispatch System

EC_02; Integrated Priority Dispatch System; $350,000, 0.00 FTE

This decision package has a total cost of $950,000. BOEC proposes internally realigning $200,000 from its contingency to reduce the obligation to $750,000. Of this, the bureau proposes $400,000 be offset by the Public Safety Project reserves, leaving a $350,000 request for one-time General Fund resources.[15]

This package addresses the Mayor's priorities to ensure public safety and police accountability and pursue innovation and strengthen resiliency. It would increase the City's responsiveness to emergencies and allow for more precise triaging and dispatching of emergency responders—addressing the concern of the Multnomah County ambulance services RFP. It would also increase the capacity for data collection and analysis by the bureau.

The project would take approximately 13 months from RFP through accreditation to implement. In the short term, it has the potential to slow call times as operations staff familiarize themselves with the software. After implementation, the system will be able to shorten call times, dispatch high- and low-acuity calls with increased precision and reduce the amount of unnecessary emergency responses.

Integrated Priority Dispatch Systems are software designed to guide emergency communications operators. It integrates with Computer-Aided Dispatch (CAD) systems to auto-populate data fields such as name, address and phone number. These and other features reduce the amount of time it takes for a dispatcher to send an emergency responder while continuing to provide instructions until emergency responders arrive.

Currently, BOEC does not utilize priority dispatch software. Instead, call takers enter data as they receive it from the caller. They then utilize analog flip cards developed by local fire and medical agencies to determine call type and priority before sending information to a dispatcher. The call taker stays on the line to provide pre-arrival instruction while the dispatcher deploys police and/or emergency responders based on information received from the call taker. This procedure allows for variance in call taker and dispatcher experience to affect response time and patient outcomes.

Installing a priority dispatch software would allow the bureau to move to a nationally recognized standard known as the Medical Priority Dispatch System (MPDS). Standardization of protocol along with the new software would reduce training times for new emergency communications operators while enabling more precise triaging of low- and high-acuity calls.[16]

[15] https://www.portlandoregon.gov/sustainabilityatwork/article/460854

[16] "Can EMDs Using MPDS Safely Identify Low-Acuity Illness and Injury?" Annals of Emergency Dispatch & Response. December 7, 2017. https://www.aedrjournal.org/can-emds-using-mpds-safely-identify-low-acuity-illness-and-injury/

Studies have also shown that using the national standard can mitigate response variance based on dispatcher experience.[17] Earlier proficiency will allow the bureau to sustain, if not improve, service levels while it moves towards full staffing. Implementation of this software will also shorten certification time by streamlining the training process. Finally, it allows an opportunity to improve data gathering and quality assurance efforts.

CBO recommend this package be funded from the Public Safety Project reserves with additional funding from partner jurisdictions in proportion to their contribution to operations.

CBO Recommendation: $750,000 | 0.00 FTE

Timekeeping Administrative Support Position

EC_07; Timekeeping/Administrative Support; $72,108; 1.00 FTE

This package requests ongoing funds for an additional OSS III position dedicated to timekeeping. The bureau's current administrative setup has 5 personnel that report to the Business Operations manager—4 administrative support positions and a Senior Financial Analyst. Two OSS III are dedicated to research and public record requests while one OSS III and one Senior Administrative Specialist are dedicated to timekeeping.

Timekeeping is currently a challenge for the bureau as administrative staff use an online Employee Self-Serve (ESS) software for electronic timekeeping while Emergency Communications Operations staff continue to use paper timesheets due to the inability of the self-serve system to handle the nuance of overtime and leave types.

CBO acknowledges the need for additional administrative support within the bureau. As a smaller bureau, BOEC faces challenges with staff turnover as skillsets and responsibilities are rarely duplicated among staff. This was the case when one of its staff members recently took a promotion that left the bureau with no one able to handle their responsibilities after their departure. This resulted in many dispatchers receiving an inaccurate paycheck.

CBO recommends that the bureau realign existing resources to procure an ESS software capable of handling the diverse types of pay that the EC ops use. Beyond this, the installation of a next generation recording system should reduce the time required to pull recordings, creating bandwidth within the 2.0 FTE research staff to supplement timekeeping efforts. Additionally, CBO recommends that the bureau leverage support and training from the Bureau of Human Resources to assist during

[17] Van Vleet, Lee. "Time to First Compression Using Medical Priority Dispatch System CPR Pre-Arrival Instructions Does Not Vary with Dispatcher Experience." Annals of Emergency Dispatch Response. Volume 3, Issue 2. 2015. https://www.aedrjournal.org/time-to-first-compression-using-medical-priority-dispatch-system-cpr-pre-arrival-instructions-does-not-vary-with-dispatcher-experience/

staff transitions.

Due to limited ongoing resources, this package is not recommended.

CBO Recommendation: $0 | 0.00 FTE

5% Reduction Package

EC_01; BOEC 5% Reduction Package; ($952,272); (11.00) FTE

This package complies with budget guidance to propose a 5% General Fund reduction. For BOEC, this reduction amounts to $763,755 in General Fund resources and $198,517 in funds from BOEC partner jurisdictions in Multnomah County.

This package would eliminate 11 Senior Dispatcher positions, dropping its budgeted allocation to 107 dispatchers. The bureau recently received the funding and position authority to add these positions based on the Matrix Consulting Group report recommendation that BOEC budget for a total of 118 senior dispatchers to right-size their bureau staff to align with demand. The 118 number is a figure determined to optimize dispatcher workload at a 50% utilization rate while accommodating turnover.

To reach full staffing, the bureau has increased its training academies from two to three per year and currently has 16 trainees in the pipeline. Accepting this cut would require the bureau to cancel at least two of its remaining 3 academies in 2018, reducing the number of individuals in the pipeline at a time where the bureau could experience 16 imminent retirement separations.[18]

Any cuts in staff now would result in the bureau having to backfill staffing obligations with overtime hours. In a recent survey, 75% of BOEC staff stated that they strongly disagree with the statement "We are appropriately staffed with dispatchers to meet our agency's needs." This sentiment correlates with 58% of respondents who disagreed or strongly disagreed with the statement "My work morale is currently high."[19]

This package would reduce the City's responsiveness to emergencies and negatively affect the percentage of emergency 9-1-1 calls answered within 20 seconds.

CBO does not recommend this reduction due to the impact it would have on emergency response, staff retention, and morale.

CBO Recommendation: $0 | 0.00 FTE

[18] As stated earlier, the bureau currently has 4 working retirees and an additional 12 who are eligible to retire at any time.
[19] Matrix Consulting Group. P. 16

SUMMARY OF REQUESTS AND RECOMMENDATIONS

Below is a summary of the Bureau of Emergency Communications' total budget.

	Adopted FY 2017-18	Request Base (A)	Bureau Decision Packages (B)	CBO Recommended Adjustments (C)	Total Recommended Revised (A+B+C)
Resources					
Budgeted Beginning Fund Balance	$ 1,470,269	$ 1,251,301	$ -	$ -	$ 1,251,301
Taxes		$ -	$ -	$ -	$ -
Licenses & Permits		$ -	$ -	$ -	$ -
Charges for Services	$ 375,749	$ 496,000	$ -	$ -	$ 496,000
Intergovernmental Revenues	$ 7,912,526	$ 7,855,198	$ 216,359	$ 36,361	$ 8,107,918
Interagency Revenue		$ -	$ 93,477	$ 853,803	$ 947,280
Fund Transfers - Revenue	$ 15,305,982	$ 15,401,656	$ -		$ 15,401,656
Bond and Note	$ -	$ -	$ -	$ -	$ -
Miscellaneous	$ 10,000	$ 20,000	$ -	$ -	$ 20,000
General Fund Discretionary	$ -	$ -	$ -	$ -	$ -
General Fund Overhead	$ -	$ -	$ -	$ -	$ -
Total Resources	**$ 25,074,526**	**$ 25,024,155**	**$ 309,836**	**$ 890,164**	**$ 26,224,155**
Requirements					
Personnel Services	$ 16,663,622	$ 16,720,654	$ (890,164)	$ 890,164	$ 16,720,654
External Materials and Services	$ 869,818	$ 1,018,000	$ 1,600,000	$ -	$ 2,618,000
Internal Materials and Services	$ 4,932,601	$ 4,742,137		$ -	$ 4,742,137
Capital Outlay				$ -	$ -
Bond Expenses	$ 232,141	$ 271,083		$ -	$ 271,083
Fund Transfers - Expense	$ 936,149	$ 1,000,980		$ -	$ 1,000,980
Contingency	$ 1,440,195	$ 1,271,301	$ (400,000)	$ -	$ 871,301
Unappropriated Fund Balance	$ -	$ -	$ -	$ -	$ -
Total Requirements	**$25,074,526**	**$25,024,155**	**$309,836**	**$890,164**	**$26,224,155**

BOEC receives nearly 80% of its funding ($15.3 million) from the General Fund. They carried over $1.4 million as contingency which is reflected in their base budget. Intergovernmental revenues make up 32% ($7.9 million) of their funding with $3 million coming from State 9-1-1 revenue and the remaining $4.9 million transferred from partner jurisdictions (rated on population size).[20]

Personnel costs make up two-thirds of BOEC expenses with a value of $16.6 million. $5.8 million (23%) are spent on materials and services including recruitment, training, office supplies and CAD maintenance.

Partner Jurisdictions currently contribute approximately 21% of BOEC operating revenues, while the City of Portland contributes the remaining 79%. As stated earlier, CBO recommend that partner jurisdictions contribute to the costs of large-scale investments as the performance outcomes they beget are realized by all parties.

[20] Partner jurisdictions are unincorporated Multnomah County (3.5%) and the cities of Gresham (13.75%), Troutdale (2.06%), Fairview (1.15%), Wood Village (0.50%) and Maywood Park (0.10%)

City of Portland

Decision Package Recommendations

(Includes Contingency and Ending Balance)

		Bureau Requested					CBO Analyst Recommendations				
	Bureau Priority	FTE	Gen Fund Ongoing	Gen Fund 1-Time	Other Revenues	Total Expenses	FTE	Gen Fund Ongoing	Gen Fund 1-Time	Other Revenues	Total Expenses
Bureau of Emergency Communications											
Adds											
EC_06 - 9-1-1 Next Generation Recording System	01	0.00	0	450,000	0	450,000	0.00	0	0	450,000	450,000
EC_02 - Integrated Priority Dispatch System	02	0.00	0	350,000	400,000	750,000	0.00	0	0	750,000	750,000
EC_07 - Timekeeping/Administrative Support	03	1.00	57,232	0	14,876	72,108	0.00	0	0	0	0
Total Adds		*1.00*	*57,232*	*800,000*	*414,876*	*1,272,108*	*0.00*	*0*	*0*	*1,200,000*	*1,200,000*
Reductions											
EC_01 - BOEC 5% Reduction Package	01	(11.00)	(763,755)	0	(198,517)	(962,272)	0.00	0	0	0	0
Total Reductions		*(11.00)*	*(763,755)*	*0*	*(198,517)*	*(962,272)*	*0.00*	*0*	*0*	*0*	*0*
Total Bureau of Emergency Communications		**(10.00)**	**(706,523)**	**800,000**	**216,359**	**309,836**	**0.00**	**0**	**0**	**1,200,000**	**1,200,000**