



Department of Employee Relations

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October 5, 2017

Finance and Personnel Committee
Milwaukee Common Council
City of Milwaukee

Re: Common Council File #170583

Communication from the Department of Employee Relations reporting the findings of a feasibility study and recommendations for deploying an emergency response system to protect City employees from possible harm during the performance of their City duties.

Background

Common Council File # 161765 directed the Department of Employee Relations (DER) and the Department of Administration (DOA) to conduct a study to determine the feasibility of deploying emergency communication devices with GPS, panic alarms, and emergency response capabilities and the feasibility of communicating directly with the Police Department to protect field employees during the performance of their city duties.

Working collaboratively, DER, DOA's Information and Technology Management Division (ITMD), and the Emergency Communications Policy Director at the Fire and Police Commission (FPC) conducted an analysis of available technologies that would comply with the requirements set above. This review included an analysis of current technologies available at the City, technologies utilized in other jurisdictions, and discussions with vendors and subject matter experts. The review included the development of a rating system to assist in determining how well technologies fit the definition laid out above. Information containing the matrix summarizing the factors, the corresponding weights as well as the functionality of each device with some general cost information is attached to this report.

It is important to note that several options of emergency communication devices exist that vary in complexity and cost. Moreover, the pace of changing technology continues to expand the availability and variety of emergency communications devices and systems. For instance, over the last several years the private industries that offer emergency communication options are converging - expanding competition and creating a volatile pricing market. Information technology software companies, cellphone companies, radio and hardware vendors, and internet providers are all developing similar technologies that address the needs for immediate and geo-targeted communication that can include one-to-many capabilities, secure data sharing, live streaming, and mass notification. Much of the trend has been moving toward applications and software that can be downloaded on a Smartphone. Conversely, while the growth of options and customization for emergency communications increase – it could be argued that much of these exciting opportunities haven't been fully vetted and utilized fully by local first responders and field staff, particularly



during an emergency. Therefore, any purchase of newer technologies comes with robust risk and unanticipated costs that are currently unknown.

Another note to consider is the fact that options will only continue to expand as the state prepares to transition to NextGeneration 911, a platform that allows texting, live-streaming, and video communication to 911 centers. Furthermore, many emergency communication vendors are transitioning pricing models from the traditional capital expenditures that required cities to purchase, own, and maintain equipment to a licensing model that involves leasing and monthly fees.

Now more than ever, it is important that city subject matter experts at ITMD, FPC, Fire (MFD), and Police (MPD) work closely with departments to develop a robust plan for emergency communications. Given the varying needs of each department, the city should not espouse itself to only one strategy. The Emergency Communications Workgroup (ECW) is an ad hoc group of policy, technical, and budget staff that meet regularly to discuss emergency communication related issues impacting the City of Milwaukee. The ECW should continue to be a forum for departments to present their needs and discuss with subject matter experts possible technological solutions to their emergency communication needs.

Analysis

This review included discussions with MPD and MFD representatives and a review of available technologies and model policies for emergency communications. It is important to recognize that the city's 911 center has to continue to be the central repository for all calls requiring first responder resources. Regardless of the emergency, all calls must first be triaged to ensure that the proper resources for police or fire are dispatched in the fastest manner possible. As the primary 911 center for the City, the MPD manages the largest 911 center in the state, with MFD as the secondary 911 center, managing all the medical and fire calls. Because the City's 911 center handles the highest volume and criticality of calls, it is comprised of some of the most experienced call takers and dispatchers in the state. The city's 911 center is enhanced 911 (E911) capable. Therefore, the system can immediately discover the general location of a mobile phone when 911 is called from that phone utilizing latitude and longitudinal coordinates based on the location of cell towers the signal travels through. The address location for landline phones is also available. Consequently, as long as a field employee has access to a mobile phone, that individual can access 911 and have their location detected by 911 dispatch. The important factor to understand is that regardless of the technology that connects individuals to first responders, the City's 911 center must first triage the call to determine and dispatch the most appropriate resources to an emergency situation.

ITMD, DER, and the Emergency Communications & Policy Director have been reviewing various emergency communication options for city field staff. Additionally, working in conjunction with DER's plan to enhance field staff safety, this report includes an emergency communication device matrix to use as a guide in long term policy and resource allocation decisions to be used on an as needed basis.

Recommendations

Based on the analysis presented above, we believe that the most effective and fiscally responsible way of meeting emergency communication needs of city employees working in the field is to establish a requirement, through an amendment to the Milwaukee Code of Ordinances, directing all general City

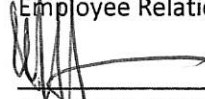
departments to issue a mobile phone to all field employees and to make a mobile phone available to all other employees who are required to perform field work. The requirement will allow employees to make or receive calls or text alerts in the case of an emergency. A mobile phone, whether assigned to the employee who is regularly required to work in the field or is made available to an employee conducting field work as part of his/her responsibilities, should be carried by the designated employees at all times during working hours.

Given that the need for emergency communication protocols and technology will continue to evolve over time, this report also recommends establishing and implementing a centralized and coordinated approach to planning, purchasing and deploying emergency communication devices, software, and/or apps now and in the future.

Respectfully Submitted,



Employee Relations Director



Emergency Communications Policy Director



Chief Information Officer

Attachments

Emergency Communication Devices Review

Goal: City of Milwaukee field employees have immediate access to first responders during an emergency and can be immediately located.

Factors to Consider

			MOST IDEAL					LEAST IDEAL
Factor	Definition	Rating Weight	5	4	3	2	1	
Communication Effectiveness	How effective is the proposed device at providing city employees direct communication to first responders?	5	Direct connection to dispatch center or police district	Utilizes the current 911 system	Third party connection	Calling tree, management chain of command	Deterrent with no connection	
Location Detection Effectiveness	How effective is the proposed device at identifying the current location of a field staff employee?	5	Offers real time location data	Triggered GPS monitoring	Requires intentional action by field staff	Requires intentional action by monitoring agency	Draws attention, situational awareness	
Training Requirements	How extensive are the anticipated training requirements in order to effectively implement the proposed device?	5	self taught	online	class	one-on-one	multiple training sessions	
Deployment & Scalability	How complex are the requirements to appropriate deploy the device to all 1470 field staff and departments?	5	Proposed device basically immediately available for use.	Proposed device requires departmental protocols	Proposed device requires departmental protocols, and protocols with ITMD, MPD	Proposed device requires departmental, ITMD, MPD and citywide oversight	Requires major overhaul of policies and protocols; extensive daily citywide management	
Management Requirements	How complex are the anticipated management requirements to effectively implement, monitor and oversee the proposed device?	5	Self managed	Only Online/email management	No more than monthly management requirements	Some regular management, communication and follow-up	Extensive daily active management and communication requirements	
Security & Maintenance	How complex are the anticipated security and maintenance requirements in order to ensure the effective use of the proposed device for all 1470 field staff?	5	No impact	Utilize current security measures	Small, minimal cost impact internal changes needed	Some Internal changes and cost required, with protocol changes	Substantial increased costs, planning to implement appropriate security	
Annual Citywide Cost	What is the anticipated annual cost to implement and deploy the proposed device to approximately 1470 field staff?	5	<10,000	<25,000	<50,000	<100,000	>100,000	

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DRAFT	<i>Communication Effectiveness</i>	<i>Location Detection Effectiveness</i>	<i>Training Requirements</i>	<i>Deployment & Scalability</i>	<i>Management Requirements</i>	<i>Security & Maintenance</i>	<i>Cost</i>	Totals
Cellphone *	4	3	4	3	3	4	5	26
Panic Alarm*	1	1	5	5	5	5	3	25
Button Activated Operator	3	5	4	4	3	4	1	24
Smartphone*	4	5	4	3	2	4	1	23
Citywatch *	2	1	5	4	3	4	2	21
Lone Worker Smartphone App	3	5	3	3	2	3	1	20
Geo-Targeted Mass Comm	4	5	1	1	1	4	2	18
Radios*	5	5	1	2	1	1	1	16
BeOn Radio Smartphone App	5	5	1	1	1	2	1	16

*Technology already available to departments

CAUTION: THIS IS ONLY A PRELIMINARY ANALYSIS, DEPARTMENTS MUST WORK WITH ITMD, DER, AND ECW TO DETERMINE THEIR BEST FIT NEEDS.

Emergency Communication Devices Review

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Score	Technology	Type	Definition
25	Panic Alarm*	Hardware	The device emits a loud, piercing sound when pressed to distract and bring attention to the situation. These devices have already purchased by DER, therefore there is no cost to departments. Cost is based on per equipment.
26	Cellphone *	Hardware	The device is a basic flip phone. Speed dial can be set up. When calling 911, its location can be transmitted to the 911 center. Cost is based on per minute use of the phone, and there is no charge for the equipment.
23	Smartphone*	Hardware	This device provide a platform for online applications. When calling 911 its location is transmitted to 911, similarly to the cellphone. Initial is cost based on purchase of the phone and service, and an annual subscription service fee thereafter.
16	Radios*	Hardware	A two-way radio that is part of the Harris Open Sky Radio system. Cost based on purchase of the equipment, and then regular required maintenance and updates thereafter to be determined based on agreement with MPD or a third party service.
21	Citywatch *	Software/ Hardware	Mass notification software that allows one to many notifications via phone, email, and text. Cost based on an annual subscription services based on the number of preregistered users.
16	BeOn Radio Smartphone App	Software/ Hardware	A mobile app that can access the Open Sky Harris Radio system. Once accessed, it turns the smartphone into a radio that would access the Harris Open Sky Radio system. Will not be available until after the SR10 upgrade, sometime in 2018. Will be available up to 500 users.
24	Button Activated Operator	Hardware	Similar to a Life Alert system, device can be configured to set off alarm based on movement. Panic button, with two-way communication with third party. 911 will still have to triage the call to determine which resources to dispatch. Cost based on leased equipment and monthly subscription
20	Lone Worker Smartphone App	Software/ Hardware	Similar to a car's OnStar system, the application connects to a third party service that can triage the callers situation and connect the caller to 911. Also, offers check-in and timer capabilities. 911 will still have to triage the call to determine which resources to dispatch. Cost based annual subscription
18	Geo-Targeted Mass Communication Platforms	Software/ Hardware	Mass notification software that coordinates communication (one-to-many/many-to-many), data sharing, livestreaming, and other resources based on a geographic location. Cost based on annual licensing fees. Would be accessed via a smartphone, tablet, laptop, or computer.

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Estimated Individual Cost

Scores	Technology	Initial Total	Based on	Contract	Owner	Ongoing Costs	Other Costs	Notes
26	Cellphone *	\$0	/phone	Existing	ITMD	.05/minute/phone	Estimated 10 min/month/phone	
25	Panic Alarm*	\$20	/device	No	DER	replacement cost only by DER	Replacement rate (estimated at 10%)	
24	Button Activated Operator Device	\$70	/month/device	Yes	Citywide	\$70/month/phone	Replacement cost at 5%	Includes third party operator, device would be leased
23	Smartphone*	\$675	/phone	Existing	ITMD	\$590/annual/phone	Replacement rate, repair, additional chargers, mobile chargers	Unlimited Data
21	Citywatch *	\$0	annual	Yes	ITMD	\$10,000/annual by ITMD	Smartphone/Mobile Device	requires smartphone or mobile device with internet capabilities to be useful in the field
20	Lone Worker Safety Smartphone App	\$99	/download	Yes	Citywide	\$25/month/download	data capable device, training	Includes third party operator, requires smartphone
18	Geo-Targeted Mass Communication Platform	\$72,000	annual	Yes	Citywide	\$72,000/annual contract	data capable device, training	requires smartphone or mobile device with internet capabilities to be useful in the field
16	BeOn Radio Smartphone App	\$355	/license	Yes	Citywide/M PD	\$80,000 server upgrade	Smartphone, increased security enhancements	In order to allow for full field staff access would require server upgrade, requires smartphone
16	Portable Radios*	\$4,000	/radio	Yes	Citywide/M PD	5% maintenance/radio	Maintenance, repair, dispatch center and training	A major overhaul of policies including dispatch capabilities must be addressed.

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Emergency Communication Devices Review

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CAUTION: COST ANALYSIS IS ONLY AN ESTIMATE BASED ON AVERAGES, COST BASED ON ALL FIELD STAFF - THEREFORE DEPENDING UPON THE USE OF PERSONAL CELL PHONES, OR OTHER MOBILE DEVICES CAN GREATLY IMPACT COST.

Initial Estimated Department Cost								Citywide Total	SmartPhone Required Total
	Field Staff:	32	30	162	1100	127	12	1463	
		Assessor's	DCD	DNS	DPW	Health	Library		
25	Panic Alarm*	\$0	\$0	\$0	\$0	\$0	\$0	\$30,000	n/a
26	Cellphone *	\$0	\$0	\$0	\$0	\$0	\$0	\$0	n/a
23	Smartphone*	\$21,598	\$20,237	\$109,342	\$742,050	\$85,589	\$8,098	\$986,914	\$986,914
16	BeOn Radio Smartphone App	\$25,360	\$24,650	\$71,510	\$404,500	\$59,085	\$18,260	\$603,365	\$1,590,279
20	Lone Worker Safety Smartphone App	\$3,168	\$2,970	\$16,038	\$108,900	\$12,573	\$1,188	\$144,837	\$1,131,751
24	Button Activated Operator Device	\$26,880	\$25,200	\$136,080	\$924,000	\$106,680	\$10,080	\$1,228,920	n/a
16	Portable Radios*	\$128,000	\$120,000	\$648,000	\$4,400,000	\$508,000	\$48,000	\$5,852,000	n/a
21	Citywatch *	\$0	\$0	\$0	\$0	\$0	\$0	\$10,000	\$996,914
18	Geo-Targeted Mass Communication Platform	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$72,000	\$1,058,914

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CAUTION: COST ANALYSIS IS ONLY AN ESTIMATE BASED ON AVERAGES

Annual Estimated Department Cost								Citywide Total	SmartPhone Required Total
	Field Staff:	32	30	162	1100	127	12	1463	
		Assessor's	DCD	DNS	DPW	Health	Library		
25	Panic Alarm*	\$0	\$0	\$0	\$0	\$0	\$0	\$3,000	n/a
26	Cellphone *	\$0	\$0	\$0	\$0	\$0	\$0	\$8,820	n/a
23	Smartphone*	\$18,878	\$17,687	\$95,572	\$648,550	\$74,794	\$7,078	\$862,559	\$862,559
16	BeOn Radio Smartphone App	\$704	\$660	\$3,564	\$24,200	\$2,794	\$264	\$32,186	\$894,745
20	Lone Worker Safety Smartphone App	\$9,600	\$9,000	\$48,600	\$330,000	\$38,100	\$3,600	\$438,900	\$1,301,459
24	Button Activated Operator Device	\$26,880	\$25,200	\$136,080	\$924,000	\$106,680	\$10,080	\$1,228,920	n/a
16	Portable Radios*	\$6,400	\$6,000	\$32,400	\$220,000	\$25,400	\$2,400	\$292,600	n/a
21	Citywatch *	\$0	\$0	\$0	\$0	\$0	\$0	\$10,000	\$872,559
18	Geo-Targeted Mass Communication Platform	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$12,000	\$72,000	\$934,559

*Technology already available to departments