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House Committee on Veterans and Emergency Management
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Chair Rep. Paul Evans
Vice Chair Rep. Rick Lewis
Vice Chair Rep. Mark Meek
Rep. Dacia Grayber
Rep. Kim Wallan
Rep. Boomer Wright

Re: OEM 9-1-1 Workstation Funding Informational Hearing, April 29, 2021

Chair Evans, Members of the Committee

My name is Keith Endacott, I am the Executive Director of Klamath 911 Emergency Communications District since 2013, the regional representative for region 9 on the OEM state 911 Advisory Committee representing Josephine, Jackson, Klamath, and Lake counties since May of 2015, I am a dispatcher at heart starting in this field in 1998, and I am a citizen of Oregon since 1991.

In late spring of 2018, the 911 center community was advised of the State Program's intent to update administrative rule. As stated, "This interim rule is needed to ensure program expenditures and liabilities to the 9-1-1 subaccount do not increase beyond the ability of the available resources and impact the administrative capabilities of OEM to manage the program to support the 9-1-1 Public Safety Answering Points (PSAP) needs within the intent of ORS 403." Included would be the creation and addition of CPE (Customer Premise Equipment, aka, hardware and software,) allocation policy. The PSAP community understood and agreed with the need to develop this policy. The Program engaged the 911 Advisory Committee (made up of regional representatives throughout the State). As this process started the program presented a policy drafted from one in California based upon Erlang formulas. When applied to our statewide community the committee found that the formula drastically reduced CPE quantities from existing numbers, but only in the state's busiest centers. It also showed increases in the least busy centers that defied reason.

That disparity in allocation was enough for the regional representatives to see the need for a better formula. The regional representatives were able to convince the program to avoid putting the formula into administrative rule so that OAR filing deadlines could be met without "locking in" such an

irrational formula. The mindset of the committee showed a clear division between the regional representatives and the program. The program seemed satisfied with their formula while the subsequent effort of the regional representatives was to modify, enhance, add factors, or replace the "Oregon Erlang" formula that the program was endorsing. The regional representatives were able to develop and present a formula which overcame the problems of Erlang and produced a more logical outcome.

The Erlang formula uses probability to determine the likelihood of simultaneous phone calls being received at a call center based on parameters of how many calls of a determined duration are processed overall. The probability math simply fails at very low volume – Erlang will tell you that two ten-minute phone calls require three phones. Common sense tells you that 3 phones are not needed for 2 phone calls. Applying the "Oregon Erlang" formula to Oregon centers, a low call volume center targeting 12 calls at 151 seconds with 10 seconds answer time results in three phones. Each of those phones would be active 10-11 minutes in an hour. However, in our largest center targeting 286 calls at 157 seconds with 10 seconds answer time Erlang says 17. All of these phones would be active 46-47 minutes in an hour. The formula puts no limitation on the multi-tasking needs of the 911 dispatcher at low volume centers but fails to meet those very same needs in a PSAP at high volume. At high call volumes the probability math has less impact, and the formula simply fits as many phone calls as it can at each phone. This explained why the Erlang formula significantly reduces CPE allocations at the busiest centers. The numbers are sobering. For 71% of the statewide 911 calls the reduction in CPE allocation is 46%.

As early as October 2018 the advisory committee began to develop an alternate formula. That formula still addresses the CPE phone itself but from the perspective of its Activity verses its Capacity (AVC). The AVC formula simply takes the same data the state intended to use in the Erlang formula to determine how many minutes of Activity is targeted. A multiplier is then applied to determine how much capacity (number of phones) meets that activity. The multiplier is determined based on service level, performance or other objectives. The committee recommendation was 0.41 which was the AVC result when applying Oregon Erlang. The formula can be applied across the state equally. It can be used to control costs, but most importantly this formula does not create bias or inequity based on the call volume of the center, and most certainly addresses the needs of the larger centers.

The advisory committee discussed this concept with the Program for well over a year trying to demonstrate how the alternative formula was more equitable first considering the 911 centers who would be shouldering the burden of additional costs related to CPE. Secondly, given the mission of the 911 center this equity really is about the public who is calling for help and who may, or may not, be getting an answer. During that time the Program set their policy despite overwhelming opposition from the PSAP community and began the cuts at the larger centers. The regional representatives kept pressing but met countless obstacles from the Program. Rather than work with them the program settled on requiring an updated policy proposal. In June of 2020, a proposal was submitted and denied. The Program response set an expectation to research and answer questions on the proposed formula

that were never researched or answered before implementing Oregon Erlang. It was clear to the regional representatives that no amount of effort would influence the program until the program itself was open to change. Regarding CPE allocation that is where it stands today. The Advisory Committee had made a recommendation and it was rejected.

The increase to the 9-1-1 tax should have a positive impact on the sustainability of the 9-1-1 subaccount. That fact should suggest further consideration into the CPE allocation. That is assuming the policy that was adopted was primarily due to the fiscal requirements of 2018. It does not meet the fair or equitable definition that was presented to the advisory committee countless times. It most certainly does not meet the objective of meeting the needs of the PSAP community as stated in the administrative rule process. I can say that I am one of several people in the PSAP community that would work with the program to correct this policy and formula if the program was actually motivated to do so.

Although I am from Klamath County and a member of the Advisory Committee. I see the most important perspective is that of the Statewide program serving the citizens of Oregon. It is that perspective that I have maintained throughout this process. It is the perspective of the entire state and the OEM 911 Program that serves it that I offer comment to you. While it may be necessary to cut expenditures this policy, simply by the nature of the formula makes the cuts in the most damaging way to the citizens of Oregon.

In conclusion I hope you take away two points from this. First the current policy and associated Oregon Erlang formula fails. For the State of Oregon, it simply cuts funding where it is needed the most. Secondly, at the PSAP level there are many of us that are interested, engaged, and committed to solving this problem.

Sincerely, Keith Endacott

Attached: Table of Erlang results taken from OEM supplied data provided in Spring 2018.

PSAP	TOP BUSIEST HOUR / AVG # CALLS / 18 MONTH PERIOD - Calls per hour	CALL DURATION SECONDS	ANSWER TIME SECONDS	Previous Allocations	Oregon Erlang Allocations	Funding Cuts
04_BOEC	286	157 sec	10 sec	50	19	-31
06_Clackamas County	170	137 sec	10 sec	14	11	-3
40_Washington County	152	196 sec	10 sec	22	13	-9
42_Willamette County	140	200 sec	10 sec	18	13	-5
05_Central Lane	116	194 sec	10 sec	17	11	-6
14_ECSO	108	176 sec	10 sec	13	10	-3
12_Deschutes*25	94	189 sec	10 sec	13	9	-4
24_Linn County	76	127 sec	10 sec	5	5	
13_Douglas County	72	145 sec	10 sec	6	6	
26_METCOM	66	163 sec	10 sec	9	6	-3
19_Josephine County	64	156 sec	10 sec	5	6	
20_Klamath 9-1-1	60	142 sec	10 sec	4	5	
43_Yamhill	46	155 sec	10 sec	5	5	
22_Lake Oswego	42	182 sec	10 sec	6	5	-1
35_Umatilla	42	158 sec	10 sec	6	5	-1
09_Coos County	42	125 sec	10 sec	4	4	
17_Hood River	32	131 sec	10 sec	4	3	-1
29_Newberg/Dundee	32	129 sec	10 sec	3	3	
39_Wasco County	32	121 sec	10 sec	4	3	-1
10_Corvallis	30	189 sec	10 sec	5	4	-1
07_Columbia County	30	170 sec	10 sec	5	4	-1
15_Frontier Regional	30	160 sec	10 sec	4	4	
32_South Lane	30	107 sec	10 sec	2	3	
01_Astoria	28	184 sec	10 sec	3	4	
02_Baker County	28	134 sec	10 sec	3	3	
25_Malheur County	28	132 sec	10 sec	3	3	
36_Union County	28	117 sec	10 sec	3	3	
33_Tillamook	26	177 sec	10 sec	3	4	
30_Prineville	24	152 sec	10 sec	3	3	
11_Curry County*4	24	146 sec	10 sec	4	3	-1
08_Coos Bay PD	22	142 sec	10 sec	3	3	
31_Seaside	22	137 sec	10 sec	3	3	
03_Brookings PD	20	132 sec	10 sec	2	3	
41_West Lane	20	115 sec	10 sec	3	3	
21_Lake ETSB	18	158 sec	10 sec	2	3	
16_Harney County	18	150 sec	10 sec	2	3	
23_Lincoln City	18	129 sec	10 sec	3	3	
28_Morrow County	16	170 sec	10 sec	5	3	-2
37_Wallowa County	16	153 sec	10 sec	2	3	
18_John Day	12	204 sec	10 sec	2	3	
38_Warm Springs	12	151 sec	10 sec	2	3	
27_Milton-Freewater	10	169 sec	10 sec	2	2	
34_Toledo PD	10	147 sec	10 sec	2	2	
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