



Fire and Police Commission

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Memorandum

To: Honorable Members of the Milwaukee Common Council

From: Leon Todd, Executive Director
Barbara Cooley, Research and Policy Analyst

Date: September 13, 2023

RE: MPD/MFD Call Wait Times Report, Q2 2023

This memo is responsive to Common Council File 190001, Amendment 33, "Insert a footnote directing the Executive Director of the Fire & Police Commission to provide quarterly reports to the Common Council on 9-1-1 call wait times, as well as activities, training, and initiatives to reduce 9-1-1 call wait times." Information in this memo has been provided by Tom Maureau of Winbourne Consulting, the City's contractor for developing a PSEP (Public Safety Enhancement Program), with analysis by the FPC Research and Policy Analyst.

Workflow Efficiencies Initiated

On October 11 & 12, 2022, a new Automatic Call Distribution (ACD) workflow was implemented which had a significant positive impact on 9-1-1 call answer performance metrics. This is the fastest way to answer a 9-1-1 call. The Automatic Call Distribution (ACD) automatically drops a 9-1-1 call into an available Call Taker's headset. The call is preceded by two beeps to alert the Call Taker of the incoming call.

Other measures to improve call answer times have included:

1. The PSEP Executive Steering Committee approved the utilization of overtime to ensure MPD had a minimum mandatory number of Call Takers.
2. MPD ECC management of call taking operations was improved.
3. A new Interactive Voice Response (IVR) message was implemented advising 9-1-1 callers to not hang-up and call back.
4. Several MFD initiatives improved the availability of MFD Call Takers thereby reducing the amount of time MPD Call Takers were on hold waiting for MFD to answer.
5. An increase in telecommunicator pay was approved by the City in March 2022 to improve recruitment and retention of telecommunicators going forward. The increase appeared in May 26, 2022 paychecks, retroactive to February 20, 2022, and was followed by a recruitment approximately double the size of the previous recruitment.

Call Answer Standard

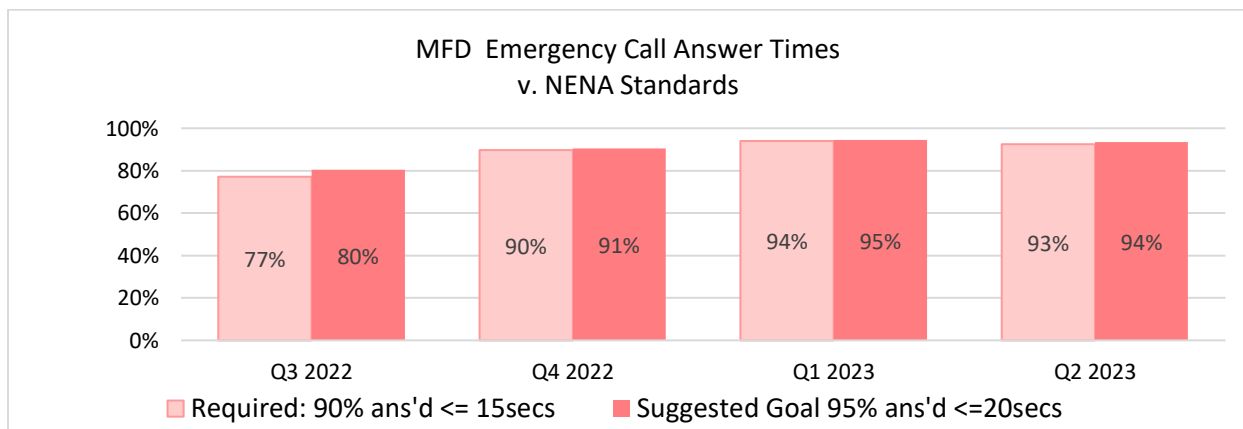
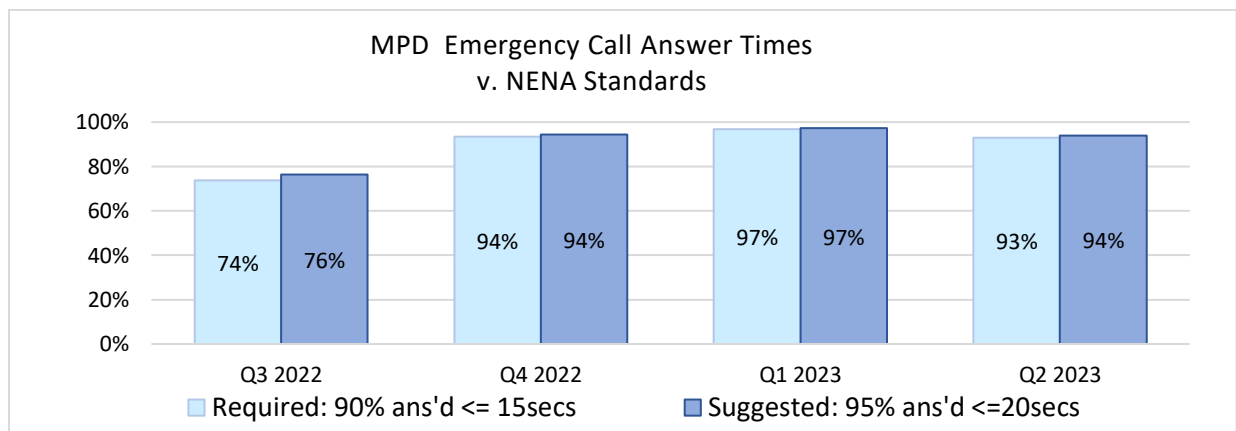
In conjunction with the implementation of the Solacom 9-1-1 system, the PSEP Executive Steering Committee established two primary performance metrics that are National Emergency Number Association (NENA) standards:

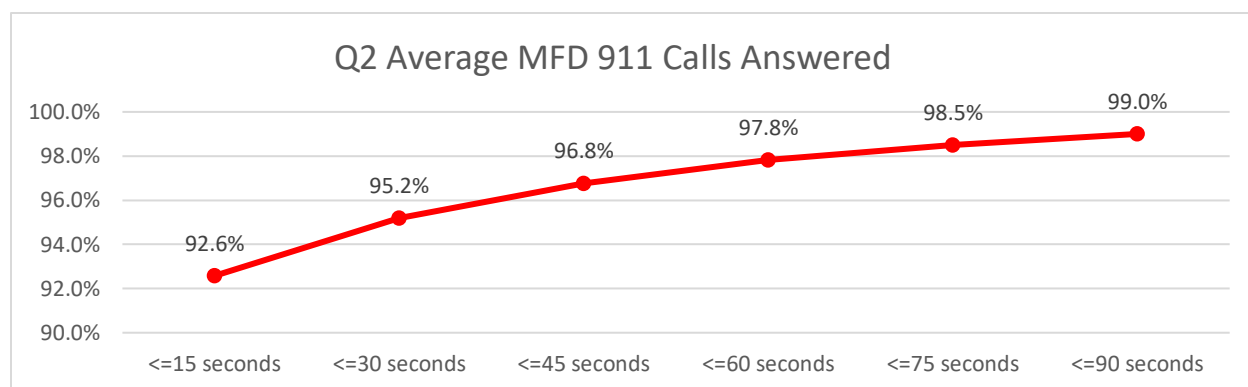
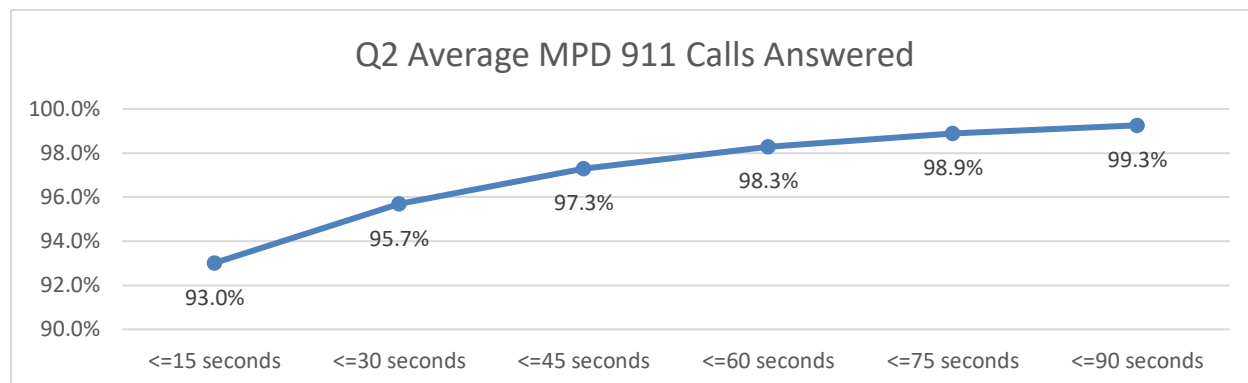
1. 90% of all 9-1-1 calls arriving at the PSAP SHALL be answered within (\leq) 15 seconds
2. 95% of all 9-1-1 calls arriving at the PSAP SHOULD be answered within (\leq) 20 seconds

The Solacom 9-1-1 system monthly reports use the NENA standard as the foundation and then 15 second increments.

Analysis by FPC Staff

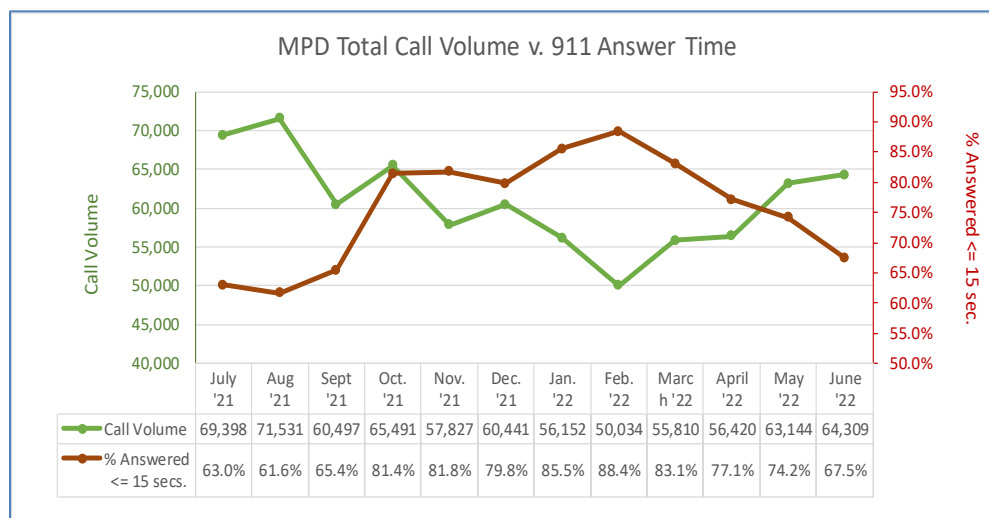
During Q2 2023, both MPD and MFD continued to exceed the NENA standard. Both exceeded the goal by 3%. This continues to be a striking improvement for both departments over Q4 2021, when percentages of the NENA standard were 81% and 78% respectively. Overall in Q2, 99.3% and 99.0% of MPD and MFD 911 calls, respectively, were answered within 90 seconds.





Effect of Staffing Level on Answer Time

The following graph shows the relationship between MPD total call volume (emergency and non-emergency) and 911 call pickup time from Q3 2021 through Q2 2022. There is a clear inverse relationship between call volume and call pickup time. The staffing level during this period was relatively flat at just over 100 call takers. This result indicated that call takers were working at capacity and there was a need to hire more call takers to reduce call answer time.



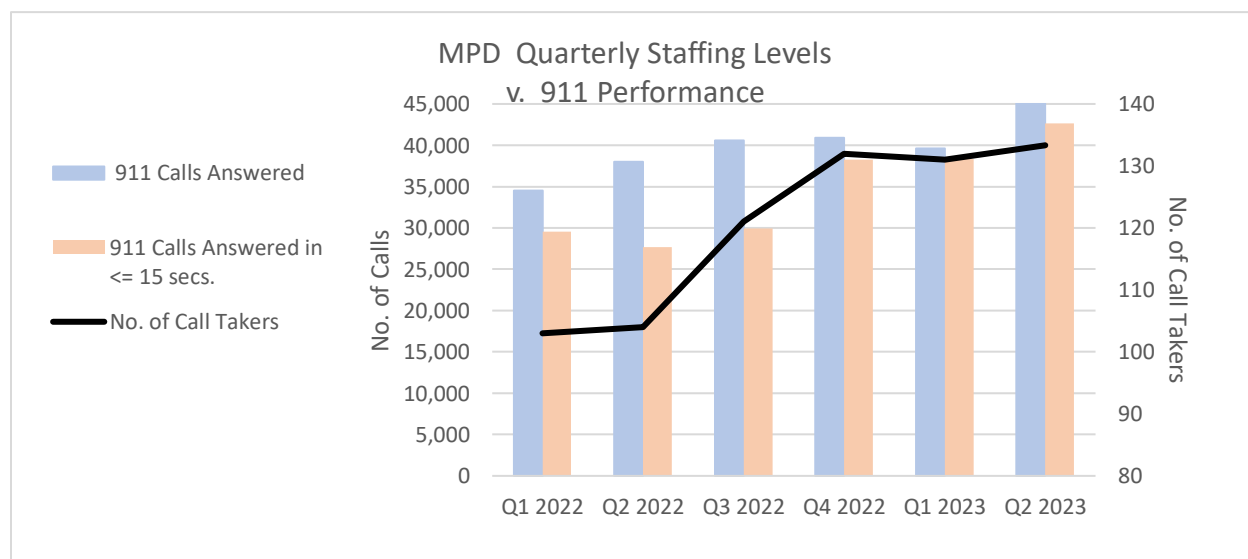
Note: "Total Call Volume" = Emergency + Administrative

Increasing Staffing Levels

The effort to increase the number of call takers for both MPD and MFD has resulted in much improved 911 call answer times, as can be seen in the chart below. That effort included an expedited hiring process as well as a pay increase for telecommunicators in early 2022. The first telecommunicator recruitment after that was more than twice the size of the last recruitment before the pay increase.

It takes 8 weeks from hire for telecommunicators to be fully trained: 5 weeks in classroom and 3 weeks on-the-job. Therefore, we saw the effects of the pay increase and expedited hiring process on call answer times during Q4 of 2022, and that level of performance has continued through Q2 of 2023. The increase in the number of call takers has been dramatic. In Q2 2023 there were 133 call takers, an increase of 2 from 131 in Q1 2023.

The correlation in the data below between call takers and number of calls answered in ≤ 15 seconds is .80, which means that 80% of the call answer rate is explained by the number of call takers.



Conclusion

Until Q3 2022, though the staff of about 100 call takers was working at capacity, NENA standards were not being met and there was a need to increase staffing. Measures put in place to do so included raising telecommunicator pay as well as improving processes, including an expedited hiring process. These were followed by an approximately doubled size of new telecommunicator applicants, a greatly increased number of hires and a much lower quit rate.

Since the end of Q4 2022, the percentage of 911 calls answered in 15 seconds or less has met or exceeded the 90% NENA standard for both MPD and MFD.

9-1-1 Outlier Calls

At the June 29, 2023 Public Safety & Health Committee meeting, Ald. Rainey questioned the number of 9-1-1 calls that were not answered within 180 seconds (3 minutes). Tom Maueau of Winbourne Consulting oversaw a response to that request (attached in full below).

From that report:

Executive Summary

- *For this report, an outlier 9-1-1 call is a call that took longer than 180 seconds to answer*
- *There are numerous factors that can cause a significant delay in answering 9-1-1 calls such as:*
 - *Insufficient Call Taker staffing*
 - *The 9-1-1 inbound workload exceeds Call Taker staffing capacity*
 - *High volume of 9-1-1 calls due to Month, Day of Week and Time of Day*
 - *A major incident occurs and is reported by numerous people*
 - *Sports events, Summerfest/concerts, large crowd events*
- *Outlier 9-1-1 calls are tracked by MPD, MFD and DEC in a monthly 9-1-1 report*
- *An analysis of January 1 – June 30, 2023 outlier 9-1-1 calls revealed:*
 - *For this time period, outlier 9-1-1 calls accounted for 0.08% of all 9-1-1 calls*
 - *Out of 181 total days, an outlier call occurred on 31 different days (17.1%)*
 - *May and June were the most prevalent months for outlier calls. There was a significant 9-1-1 workload increase from a low in February to May (32.8% increase) and June (35.3% increase)*
 - *The average duration of outlier calls ranged from 3.1 minutes to 11 minutes*
 - *The majority of outlier calls (59.3%) were in the 3.1 – 3.9 minute range*
 - *Friday, Saturday and Sunday were the most frequent days of the week for outlier calls*
- *June 24, 2023 accounted for 39.8% of all outlier 9-1-1 calls from the January 1 – June 30, 2023 time frame*
 - *There appears to be numerous factors that caused the high volume of outlier calls on this date including*
 - *Saturday – High volume Day of Week*
 - *Summerfest weekend*
 - *Insufficient MPD ECC Call Taker staffing due to planned and unplanned leave*
 - *The NICE recording system showed Call Takers continuously on 9-1-1 and non-emergency calls during the peak workload period*
- *In August 2023, MPD re-allocated ECC Call Taker personnel to be more aligned with the 9-1-1 workload for the summer months*
 - *The re-allocation includes additional Call Taker personnel on Days (7:30am – 3:30pm) and Early (3:30pm – 11:30pm) shifts when the peak 9-1-1 workload is occurring*

- *An ECC Staffing Analysis is in the final phase of being completed. The report includes recommendations for minimum mandatory Call Taker staffing.*

Q2 2023 DATA

9-1-1/10-Digit Emergency Calls

MPD Q2 2023

Incoming MPD 9-1-1 Calls	April	May	June
All Received	44,318	49,213	50,118
Answered	42,898	47,155	47,659
Abandoned	1,420	2,058	2,459
Call Backs	1,244	1,806	2,173
MPD Answered 9-1-1 Calls	April	May	June
Average 9-1-1 Call Wait Time	0:00:03	0:00:04	0:00:05
Percent Answered Within 15 sec	94.7%	92.5%	91.8%

MFD Q2 2023

Incoming MFD 9-1-1 Calls	April	May	June
All Received	14,486	15,565	15,351
Answered	14,408	15,447	15,229
Abandoned	77	118	122
Call Backs	4	2	4
MFD Answered 9-1-1 Calls	April	May	June
Average 9-1-1 Call Wait Time	0:00:04	0:00:04	0:00:05
Percent Answered Within 15 sec	92.9%	92.6%	92.3%

9-1-1/10 Digit Call Answer Time**MPD Q2 2023**

MPD Emergency TIME INCREMENT	April			May			June		
	MPD CALLS ANSWERED	Individual % of Calls	Cumulative % of Calls	MPD CALLS ANSWERED	Individual % of Calls	Cumulative % of Calls	MPD CALLS ANSWERED	Individual % of Calls	Cumulative % of Calls
0 - 15 Seconds	40,625	94.7%	94.7%	43,632	92.5%	92.5%	43,602	91.8%	91.8%
16 - 30 Seconds	872	2.0%	96.7%	1,389	2.9%	95.5%	1,451	3.1%	94.9%
31 - 45 Seconds	541	1.3%	98.0%	792	1.7%	97.2%	890	1.9%	96.7%
46 - 60 Seconds	355	0.8%	98.8%	513	1.1%	98.2%	509	1.1%	97.8%
61 - 75 Seconds	197	0.5%	99.3%	303	0.6%	98.9%	327	0.7%	98.5%
76 - 90 Seconds	128	0.3%	99.6%	183	0.4%	99.3%	195	0.4%	98.9%
91 - 105 Seconds	68	0.2%	99.7%	116	0.2%	99.5%	153	0.3%	99.2%
106 - 120 Seconds	60	0.1%	99.9%	71	0.2%	99.7%	99	0.2%	99.4%
121 - 150 Seconds	35	0.1%	100.0%	78	0.2%	99.8%	109	0.2%	99.7%
151 - 180 Seconds	13	0.0%	100.0%	35	0.1%	99.9%	59	0.1%	99.8%
181 - 210 Seconds	2	0.0%	100.0%	23	0.0%	100.0%	41	0.1%	99.9%
211 - 240 Seconds	2	0.0%	100.0%	11	0.0%	100.0%	19	0.0%	99.9%
241 - 270 Seconds	0	0.0%	100.0%	4	0.0%	100.0%	12	0.0%	99.9%
271 - 300 Seconds	0	0.0%	100.0%	2	0.0%	100.0%	4	0.0%	100.0%
301 - 330 Seconds	0	0.0%	100.0%	2	0.0%	100.0%	3	0.0%	100.0%
331 - 360 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	3	0.0%	100.0%
361 - 390 Seconds	0	0.0%	100.0%	1	0.0%	100.0%	3	0.0%	100.0%
391 - 420 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	1	0.0%	100.0%
421 - 450 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	5	0.0%	100.0%
451 - 480 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	4	0.0%	100.0%
481 - 510 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	1	0.0%	100.0%
511 - 540 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
541 - 570 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	1	0.0%	100.0%
571 - 600 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
601 - 1200 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	1	0.0%	100.0%
1201 - 1800 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
> 1800 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
Total Answered Calls	42,898	100.0%		47,155	100.0%		47,492	100.0%	

MFD Q2 2023

MFD Emergency TIME INCREMENT	April			May			June		
	MFD CALLS ANSWERED	Individual % of Calls	Cumulative % of Calls	MFD CALLS ANSWERED	Individual % of Calls	Cumulative % of Calls	MFD CALLS ANSWERED	Individual % of Calls	Cumulative % of Calls
0 - 15 Seconds	13,381	92.9%	92.9%	14,306	92.6%	92.6%	14,049	92.3%	92.3%
16 - 30 Seconds	357	2.5%	95.3%	400	2.6%	95.2%	419	2.8%	95.0%
31 - 45 Seconds	234	1.6%	97.0%	237	1.5%	96.7%	242	1.6%	96.6%
46 - 60 Seconds	142	1.0%	98.0%	172	1.1%	97.9%	164	1.1%	97.7%
61 - 75 Seconds	78	0.5%	98.5%	113	0.7%	98.6%	109	0.7%	98.4%
76 - 90 Seconds	75	0.5%	99.0%	68	0.4%	99.0%	88	0.6%	99.0%
91 - 105 Seconds	47	0.3%	99.3%	42	0.3%	99.3%	61	0.4%	99.4%
106 - 120 Seconds	38	0.3%	99.6%	43	0.3%	99.6%	32	0.2%	99.6%
121 - 150 Seconds	35	0.2%	99.9%	28	0.2%	99.8%	42	0.3%	99.8%
151 - 180 Seconds	9	0.1%	99.9%	13	0.1%	99.8%	7	0.0%	99.9%
181 - 210 Seconds	9	0.1%	100.0%	14	0.1%	99.9%	6	0.0%	99.9%
211 - 240 Seconds	3	0.0%	100.0%	4	0.0%	100.0%	7	0.0%	100.0%
241 - 270 Seconds	0	0.0%	100.0%	1	0.0%	100.0%	0	0.0%	100.0%
271 - 300 Seconds	0	0.0%	100.0%	5	0.0%	100.0%	0	0.0%	100.0%
301 - 330 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	1	0.0%	100.0%
331 - 360 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
361 - 390 Seconds	0	0.0%	100.0%	1	0.0%	100.0%	0	0.0%	100.0%
391 - 420 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
421 - 450 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	1	0.0%	100.0%
451 - 480 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
481 - 510 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	1	0.0%	100.0%
511 - 540 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
541 - 570 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
571 - 600 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
601 - 1200 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
1201 - 1800 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
> 1800 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
Total Answered Calls	14,408	100.0%		15,447	100.0%		15,229	100.0%	

Non-Emergency/Administrative Calls

MPD Q2 2023

Incoming MPD Non-Emergency Calls	April	May	June
Answered**	17,031	19,404	18,587
MPD Answered Non-Emergency Calls	April	May	June
Average Non-Emergency Call Wait Time	0:00:28	0:00:26	0:00:42
Percent Answered Within 15 sec	80.7%	78.9%	71.9%

MFD Q2 2023

Incoming MFD Non-Emergency Calls	April	May	June
Answered**	1,721	2,048	1,853
MFD Answered Non-Emergency Calls	April	May	June
Average Non-Emergency Call Wait Time	0:00:04	0:00:05	0:00:04
Percent Answered Within 15 sec	94.7%	94.2%	93.6%

Non-Emergency/Administrative Call Answer Time**MPD Q2 2023**

MPD Admin	April				May				June			
	MPD CALLS ANSWERED	Individual % of Calls	Cumulative % of Calls	MPD CALLS ANSWERED	Individual % of Calls	Cumulative % of Calls	MPD CALLS ANSWERED	Individual % of Calls	MPD CALLS ANSWERED	Individual % of Calls	Cumulative % of Calls	MPD CALLS ANSWERED
TIME INCREMENT												
0 - 15 Seconds	13,748	80.7%	80.7%	15,313	78.9%	78.9%	13,360	71.9%	13,360	71.9%	71.9%	13,360
16 - 30 Seconds	423	2.5%	83.2%	611	3.1%	82.1%	602	3.2%	602	3.2%	75.1%	602
31 - 45 Seconds	343	2.0%	85.2%	485	2.5%	84.6%	536	2.9%	536	2.9%	78.0%	536
46 - 60 Seconds	322	1.9%	87.1%	410	2.1%	86.7%	506	2.7%	506	2.7%	80.7%	506
61 - 75 Seconds	279	1.6%	88.7%	390	2.0%	88.7%	415	2.2%	415	2.2%	83.0%	415
76 - 90 Seconds	240	1.4%	90.2%	276	1.4%	90.1%	388	2.1%	388	2.1%	85.0%	388
91 - 105 Seconds	204	1.2%	91.4%	280	1.4%	91.6%	323	1.7%	323	1.7%	86.8%	323
106 - 120 Seconds	170	1.0%	92.4%	223	1.1%	92.7%	307	1.7%	307	1.7%	88.4%	307
121 - 150 Seconds	267	1.6%	93.9%	335	1.7%	94.4%	415	2.2%	415	2.2%	90.7%	415
151 - 180 Seconds	197	1.2%	95.1%	238	1.2%	95.7%	328	1.8%	328	1.8%	92.4%	328
181 - 210 Seconds	162	1.0%	96.0%	163	0.8%	96.5%	283	1.5%	283	1.5%	93.9%	283
211 - 240 Seconds	124	0.7%	96.8%	176	0.9%	97.4%	201	1.1%	201	1.1%	95.0%	201
241 - 270 Seconds	114	0.7%	97.4%	112	0.6%	98.0%	159	0.9%	159	0.9%	95.9%	159
271 - 300 Seconds	61	0.4%	97.8%	85	0.4%	98.4%	146	0.8%	146	0.8%	96.7%	146
301 - 330 Seconds	59	0.3%	98.1%	71	0.4%	98.8%	114	0.6%	114	0.6%	97.3%	114
331 - 360 Seconds	54	0.3%	98.4%	45	0.2%	99.0%	92	0.5%	92	0.5%	97.8%	92
361 - 390 Seconds	32	0.2%	98.6%	47	0.2%	99.3%	78	0.4%	78	0.4%	98.2%	78
391 - 420 Seconds	29	0.2%	98.8%	21	0.1%	99.4%	58	0.3%	58	0.3%	98.5%	58
421 - 450 Seconds	34	0.2%	99.0%	22	0.1%	99.5%	60	0.3%	60	0.3%	98.8%	60
451 - 480 Seconds	20	0.1%	99.1%	13	0.1%	99.5%	32	0.2%	32	0.2%	99.0%	32
481 - 510 Seconds	28	0.2%	99.3%	16	0.1%	99.6%	29	0.2%	29	0.2%	99.2%	29
511 - 540 Seconds	17	0.1%	99.4%	18	0.1%	99.7%	31	0.2%	31	0.2%	99.3%	31
541 - 570 Seconds	20	0.1%	99.5%	11	0.1%	99.8%	15	0.1%	15	0.1%	99.4%	15
571 - 600 Seconds	17	0.1%	99.6%	11	0.1%	99.8%	12	0.1%	12	0.1%	99.5%	12
601 - 1200 Seconds	66	0.4%	100.0%	31	0.2%	100.0%	93	0.5%	93	0.5%	100.0%	93
1201 - 1800 Seconds	1	0.0%	100.0%	1	0.0%	100.0%	5	0.0%	5	0.0%	100.0%	5
> 1800 Seconds	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	0	0.0%	100.0%	0
Total Answered Calls	17,031	100.0%		19,404	100.0%		18,588	100.0%				

MFD Q2 2023

MFD Admin		April				May				June			
TIME INCREMENT		MFD CALLS ANSWERED	Individual % of Calls	Cumulative % of Calls	MFD CALLS ANSWERED	Individual % of Calls	Cumulative % of Calls	MFD CALLS ANSWERED	Individual % of Calls	Cumulative % of Calls	MFD CALLS ANSWERED	Individual % of Calls	Cumulative % of Calls
0 - 15 Seconds		1,629	94.7%	94.7%	1,929	94.2%	94.2%	1,734	93.6%	94.2%	1,734	93.6%	93.6%
16 - 30 Seconds		20	1.2%	95.8%	28	1.4%	95.6%	33	1.8%	95.6%	33	1.8%	95.4%
31 - 45 Seconds		11	0.6%	96.5%	17	0.8%	96.4%	16	0.9%	96.4%	16	0.9%	96.2%
46 - 60 Seconds		15	0.9%	97.3%	13	0.6%	97.0%	15	0.8%	97.0%	15	0.8%	97.0%
61 - 75 Seconds		12	0.7%	98.0%	18	0.9%	97.9%	13	0.7%	97.7%	13	0.7%	97.7%
76 - 90 Seconds		11	0.6%	98.7%	10	0.5%	98.4%	10	0.5%	98.4%	10	0.5%	98.3%
91 - 105 Seconds		6	0.3%	99.0%	6	0.3%	98.7%	6	0.3%	98.7%	6	0.3%	98.6%
106 - 120 Seconds		8	0.5%	99.5%	5	0.2%	98.9%	7	0.4%	98.9%	7	0.4%	99.0%
121 - 150 Seconds		3	0.2%	99.7%	6	0.3%	99.2%	7	0.4%	99.2%	7	0.4%	99.4%
151 - 180 Seconds		3	0.2%	99.8%	6	0.3%	99.5%	4	0.2%	99.5%	4	0.2%	99.6%
181 - 210 Seconds		1	0.1%	99.9%	0	0.0%	99.5%	2	0.1%	99.5%	2	0.1%	99.7%
211 - 240 Seconds		0	0.0%	99.9%	1	0.0%	99.6%	0	0.0%	99.6%	0	0.0%	99.7%
241 - 270 Seconds		1	0.1%	99.9%	3	0.1%	99.7%	2	0.1%	99.7%	2	0.1%	99.8%
271 - 300 Seconds		0	0.0%	99.9%	2	0.1%	99.8%	0	0.0%	99.8%	0	0.0%	99.8%
301 - 330 Seconds		0	0.0%	99.9%	1	0.0%	99.9%	1	0.1%	99.9%	1	0.1%	99.8%
331 - 360 Seconds		0	0.0%	99.9%	0	0.0%	99.9%	1	0.1%	99.9%	1	0.1%	99.9%
361 - 390 Seconds		0	0.0%	99.9%	2	0.1%	100.0%	0	0.0%	100.0%	0	0.0%	99.9%
391 - 420 Seconds		1	0.1%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	99.9%
421 - 450 Seconds		0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	99.9%
451 - 480 Seconds		0	0.0%	100.0%	1	0.0%	100.0%	1	0.1%	100.0%	1	0.1%	99.9%
481 - 510 Seconds		0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	99.9%
511 - 540 Seconds		0	0.0%	100.0%	0	0.0%	100.0%	1	0.1%	100.0%	1	0.1%	100.0%
541 - 570 Seconds		0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
571 - 600 Seconds		0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
601 - 1200 Seconds		0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
1201 - 1800 Seconds		0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
> 1800 Seconds		0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%	0	0.0%	100.0%
Total Answered Calls		1,721	100.0%		2,048	100.0%		1,853	100.0%				



To: Barbara Cooley
Fire & Police Commission

From: Tom Maureau
Public Safety Enhancement Program
Winbourne Consulting, Inc.

Date: August 24, 2023

Subject: MPD 9-1-1 Outlier Calls for January 1 – June 30, 2023

Reference FPC Q1 2023 9-1-1 Report

- Alderman Rainey's question at the June 29, 2023 Public Safety & Health Committee meeting about the extreme outlier 9-1-1 calls (e.g., Calls that took longer than 180 seconds to answer)
- Director Todd direction to provide information to the Alderman and Committee

Background Information

- This report is focused on the City's inbound 9-1-1 workload which the MPD Emergency Communications Center (ECC) currently has primary responsibility
- The report was reviewed and approved by relevant MPD, DEC and Telecom personnel

Executive Summary

- For this report, an outlier 9-1-1 call is a call that took longer than 180 seconds to answer
- There are numerous factors that can cause a significant delay in answering 9-1-1 calls such as:
 - Insufficient Call Taker staffing
 - The 9-1-1 inbound workload exceeds Call Taker staffing capacity
 - High volume of 9-1-1 calls due to Month, Day of Week and Time of Day
 - A major incident occurs and is reported by numerous people
 - Sports events, Summerfest/concerts, large crowd events
- Outlier 9-1-1 calls are tracked by MPD, MFD and DEC in a monthly 9-1-1 report
- An analysis of January 1 – June 30, 2023 outlier 9-1-1 calls revealed:
 - For this time period, outlier 9-1-1 calls accounted for 0.08% of all 9-1-1 calls
 - Out of 181 total days, an outlier call occurred on 31 different days (17.1%)
 - May and June were the most prevalent months for outlier calls. There was a significant 9-1-1 workload increase from a low in February to May (32.8% increase) and June (35.3% increase)
 - The average duration of outlier calls ranged from 3.1 minutes to 11 minutes



- The majority of outlier calls (59.3%) were in the 3.1 – 3.9 minute range
- Friday, Saturday and Sunday were the most frequent days of the week for outlier calls
- June 24, 2023 accounted for 39.8% of all outlier 9-1-1 calls from the January 1 – June 30, 2023 time frame
 - There appears to be numerous factors that caused the high volume of outlier calls on this date including
 - Saturday – High volume Day of Week
 - Summerfest weekend
 - Insufficient MPD ECC Call Taker staffing due to planned and unplanned leave
 - The NICE recording system showed Call Takers continuously on 9-1-1 and non-emergency calls during the peak workload period
- In August 2023, MPD re-allocated ECC Call Taker personnel to be more aligned with the 9-1-1 workload for the summer months
 - The re-allocation includes additional Call Taker personnel on Days (7:30am – 3:30pm) and Early (3:30pm – 11:30pm) shifts when the peak 9-1-1 workload is occurring
- An ECC Staffing Analysis is in the final phase of being completed. The report includes recommendations for minimum mandatory Call Taker staffing

Factors That Influence 9-1-1 Call Answer Delays

There are numerous factors that can cause a delay in answering 9-1-1 calls including:

- Total available ECC Call Taker staffing
- ECC Call Takers logged-in and available on the 9-1-1 system
- Assignment of Call Takers dedicated to 9-1-1 calls versus non-emergency calls
- Inability to provide relief personnel when Call Takers are on break resulting in a decrease of Call Taker coverage
- 9-1-1 system Automatic Call Distribution (ACD) design and configuration
- MFD ECC Call Taker staffing and workload which can result in MPD Call Takers being on-hold for a period of time while waiting to transfer a 9-1-1 caller to an MFD ECC Call Taker. MPD Call Takers are not available to answer new 9-1-1 calls during the hold time
- ECC policies and procedures
- ECC desired performance metrics for 9-1-1/10-digit emergency and non-emergency calls
- Inbound workload exceeds the capacity of ECC Call Taker staffing (e.g., 9-1-1, 10-digit emergency, non-emergency and administrative calls)
- Citizen utilization of 9-1-1 (e.g., Non-emergency events reported via the 9-1-1 system, accidental 9-1-1 calls, 9-1-1 caller's hang-up and then re-dial, etc.)



- 9-1-1 system equipment/software problem

Factors That Influence 9-1-1 Inbound Workload

There are numerous factors that can influence inbound 9-1-1 workload:

- Season (e.g., Winter, Spring, Summer and Fall)
- Month
- Day of Week
- Time of Day
- Weather (e.g., Major storm, inclement weather, good weather (e.g., more people outside))
- Activity in the City (e.g., Sports events, concerts, special events, etc.)
- A single major event (e.g., Traffic crash at a busy intersection, critical event that occurs where there is a large crowd, event that affects many people, etc.)
- Known peak workload patterns (e.g., Morning and afternoon rush hour, after school, pre and post sporting event, etc.)
- Other factors

Personnel Leave Factors That Influence ECC Shift Staffing

- Planned/approved leave (e.g., Vacation)
- Unplanned leave (e.g., Sick, FMLA)
- Extended leave (e.g., Leave without pay)

Tracking Outlier Calls - Monthly 9-1-1 Report

- Outlier calls are identified in a Monthly 9-1-1 Report published by the City's Telecom Unit. Refer to Exhibit "A"

January 1 – June 30, 2023 Outlier 9-1-1 Calls That Took Longer than 180 Seconds to Answer

A Solacom 9-1-1 system report (Exhibit "B") revealed the following from January 1 – June 30, 2023 for 9-1-1 calls that took longer than 180 seconds to answer (e.g., outlier call):

- Out of a total of 265,177 9-1-1 calls there were a total of 221 instances in-which a 9-1-1 call was not answered within 180 seconds (0.08%)
- Out of 181 total days, an outlier call occurred on 31 different days (17.1%)
- May and June were the most prevalent months for outlier calls:
 - There was a significant workload increase from the low in February to May (32.8% increase) and June (35.3% increase)
 - May and June combined account for 63.3% of all outlier calls for the January to June time period
 - June has the most days an outlier call occurred (12) and the most incidents (97)



Month	Total Number of 9-1-1 Calls	Number of Days an Outlier Call Occurred	Number of Outlier Calls
January	42,002	2	63
February	37,055	2	10
March	42,471	3	5
April	44,318	2	3
May	49,213	10	43
June	50,118	12	97
Total	265,177	31	221

- The average duration of outlier calls ranged from 3.1 minutes to 11 minutes
- The majority of outlier calls (59.3%) were in the 3.1 – 3.9 minute range

Outlier Answer Time Range	Number of Outlier Calls	Percent of Outlier Calls
3.1 – 3.9 mins	131	59.3%
4.1 – 4.9 mins	39	17.6%
5.1 – 5.9 mins	34	15.4%
6.1 – 6.9 mins	5	2.2%
7.1 – 7.9 mins	9	4.1%
8.1 – 8.9 mins	2	0.9%
9.1 – 9.9 mins	0	N/A
10 mins	0	N/A
11 mins	1	0.5%

- Friday, Saturday and Sunday were the most frequent days of the week for outlier calls

Day of Week	Number of Dates
Sunday	2
Monday	4
Tuesday	3
Wednesday	3
Thursday	6
Friday	6
Saturday	7



June 24, 2023

- June 24/Saturday accounts for 39.8% of all outlier calls from the January 1 – June 30, 2023 time frame
- There appears to be numerous factors that caused the high volume of outlier calls including:
 - Saturday – High volume Day of Week
 - Summerfest weekend
 - Insufficient MPD ECC Call Taker staffing
- MPD Call Taking was backfilled due to lack of staffing. Four people were off due to unscheduled off time and three people were off due to scheduled/approved off time

Day Shift 7:30am – 3:30pm	Early Shift 3:30pm – 11:30pm
1 Sergeant	1 Sergeant
1 Lead	1 Lead
13 Call Takers (7 - Dedicated 9-1-1) (6 – Non-emergency/Admin) Note: 9-1-1 calls are directed to Non-emergency Call Takers if the dedicated 9-1-1 Call Takers are on calls and the non-emergency Call Taker is available.	10 – Call Takers (6 – Dedicated 9-1-1) (4 – Non-emergency/Admin) Note: 9-1-1 calls are directed to Non-emergency Call Takers if the dedicated 9-1-1 Call Takers are on calls and the non-emergency Call Taker is available.
Note: 14 Call Takers worked but two of them worked half-shifts, one from 7:30am-11:30am and the other from 11:30am-3:30pm	Note: 12 Call Takers worked, but four of them worked half-shifts, two from 3:30pm - 7:30pm and the other two Call Takers from 7:30pm -11:30pm.

- Significant 9-1-1 and CAD incident activity
 - 319 calls for service were entered into the CAD system during the hours of 9:09 pm to 11:35 pm which was the most problematic time frame for outlier calls
 - During this timeframe, there was an average of two calls entered into the CAD system per minute
 - During peak workload periods, three to four calls for service were entered into the CAD system per minute
 - At 9:46pm, seven calls for service were entered into the CAD system
 - Of the 319 incidents entered into the CAD system, 119 (37.3%) were “9-1-1 Abuse” calls (e.g., Accidental/miss-dial 9-1-1 call, 9-1-1 hang-up, etc.)
- The NICE recording system showed Call Takers continuously on 9-1-1 and non-emergency calls during the peak workload time period. Refer to Exhibit “C” for example snapshots of Call Taker Total Talk Time

Exhibit “A” – June 2023 MPD 9-1-1 Report Example

The below example shows all outlier calls are identified in a monthly report.

9-1-1 / 10-DIGIT EMERGENCY CALLS / ANSWERED

MPD ONLY, June 2023

Total MPD Calls Received	Total MPD Calls Answered	Total MPD Calls Abandoned
50,118	47,659	2,459



NENA STANDARD :

90% of all 9-1-1 calls arriving at the PSAP SHALL be answered within (<=) 15 seconds.

Achieved Percentage	91.8%	Meets or Exceeds NENA Standards	Near NENA Standards (within 5%)	Below NENA Standards
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NENA STANDARD :

95% of all 9-1-1 calls arriving at the PSAP SHOULD be answered within (<=) 20 seconds.

Achieved Percentage	92.9%	Meets or Exceeds NENA Standards	Near NENA Standards (within 5%)	Below NENA Standards
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TIME INCREMENT	MPD CALLS ANSWERED	Percentage of Calls
0 - 15 Seconds	43,602	91.8%
16 - 30 Seconds	1,451	3.1%
31 - 45 Seconds	890	1.9%
46 - 60 Seconds	509	1.1%
61 - 75 Seconds	327	0.7%
76 - 90 Seconds	195	0.4%
91 - 105 Seconds	153	0.3%
106 - 120 Seconds	99	0.2%
121 - 150 Seconds	109	0.2%
151 - 180 Seconds	59	0.1%
181 - 210 Seconds	41	0.1%
211 - 240 Seconds	19	0.0%
241 - 270 Seconds	12	0.0%
271 - 300 Seconds	4	0.0%
301 - 330 Seconds	3	0.0%
331 - 360 Seconds	3	0.0%
361 - 390 Seconds	3	0.0%
391 - 420 Seconds	1	0.0%
421 - 450 Seconds	5	0.0%
451 - 480 Seconds	4	0.0%
481 - 510 Seconds	1	0.0%
511 - 540 Seconds	0	0.0%
541 - 570 Seconds	1	0.0%
571 - 600 Seconds	0	0.0%
601 - 1200 Seconds	1	0.0%
1201 - 1800 Seconds	0	0.0%
> 1800 Seconds	0	0.0%

Total Answered Calls	47,492	100.0%
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TIME UNTIL 9-1-1 / 10-DIGIT EMERGENCY CALLS ARE ANSWERED MPD ONLY



Exhibit “B” – Solacom January 1 – June 30, 2023 Outlier Report

Legend:

1. Column #1 & #2 – Different colors designate a different date
2. Column #3 – **Yellow** and **orange** are groups of outlier 9-1-1 calls that occurred in the same time period
3. Column #4 – The count of how many outlier 9-1-1 calls occurred during that time period (e.g., 2 = 2 calls). **Red** identifies more than one 9-1-1 call
4. Column #5 – Average duration to answer the outlier call for all calls in that time period (e.g., 2 calls with 3.1 minutes means it took an average of 3.1 minutes to answer both calls). Color coding identifies the different time ranges in minutes

Solacom- Timestamp Date		Solacom-Timestamp Date	Items	Solacom- Caller-Ring
Time Day	Day of Week	Time Minute	Count	Time Avg.
1/1/2023	Sunday - New Years Eve	01/01/2023 12:04:00a	2	3.1
1/1/2023		01/01/2023 12:05:00a	5	3.6
1/1/2023		01/01/2023 12:06:00a	7	3.8
1/1/2023		01/01/2023 12:07:00a	6	4.2
1/1/2023		01/01/2023 12:08:00a	5	4.5
1/1/2023		01/01/2023 12:09:00a	3	5.3
1/1/2023		01/01/2023 12:10:00a	6	5.2
1/1/2023		01/01/2023 12:11:00a	6	5.1
1/1/2023		01/01/2023 12:12:00a	7	5
1/1/2023		01/01/2023 12:13:00a	3	5.3
1/1/2023		01/01/2023 12:14:00a	6	4.6
1/1/2023		01/01/2023 12:15:00a	4	3.9
1/1/2023		01/01/2023 12:16:00a	1	3.4
1/4/2023	Wednesday	01/04/2023 09:47:00a	1	3.3
1/4/2023		01/04/2023 02:25:00p	1	3.3
2/19/2023	Sunday	02/19/2023 12:53:00p	1	3.4
2/19/2023		02/19/2023 01:28:00p	1	3.9
2/19/2023		02/19/2023 01:29:00p	1	4.3
2/19/2023		02/19/2023 01:30:00p	1	5
2/19/2023		02/19/2023 01:32:00p	1	6.9
2/21/2023	Tuesday	02/21/2023 01:59:00p	1	3.3

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2/21/2023		02/21/2023 02:00:00p	1	3.2
2/21/2023		02/21/2023 02:20:00p	1	3.3
2/21/2023		02/21/2023 02:21:00p	1	3.1
2/21/2023		02/21/2023 02:23:00p	1	3.4
3/18/2023	Saturday	03/18/2023 11:23:00a	1	3.3
3/28/2023	Tuesday	03/28/2023 02:28:00p	3	3.3
3/29/2023	Wednesday	03/29/2023 08:55:00a	1	3.1
4/4/2023	Tuesday	04/04/2023 09:47:00a	1	3
4/4/2023		04/04/2023 09:48:00a	1	3.9
4/14/2023	Friday	04/14/2023 01:11:00p	1	3.2
5/7/2023	Sunday	05/07/2023 01:23:00p	1	3
5/11/2023	Thursday	05/11/2023 01:01:00p	6	3.4
5/11/2023		05/11/2023 09:15:00p	1	3.3
5/11/2023		05/11/2023 09:16:00p	2	3.5
5/12/2023	Friday	05/12/2023 05:25:00p	2	3
5/12/2023		05/12/2023 05:51:00p	2	3.5
5/12/2023		05/12/2023 05:52:00p	1	3.6
5/12/2023		05/12/2023 06:00:00p	1	3.1
5/15/2023	Monday	05/15/2023 10:32:00p	1	3.4
5/19/2023	Friday	05/19/2023 05:25:00p	2	3.3
5/19/2023		05/19/2023 05:32:00p	1	3
5/19/2023		05/19/2023 05:33:00p	2	3.8
5/20/2023	Saturday	05/20/2023 03:28:00p	2	3.2
5/26/2023	Friday	05/26/2023 05:49:00p	2	3.3
5/26/2023		05/26/2023 05:52:00p	1	3.1
5/27/2023	Saturday	05/27/2023 11:17:00a	1	3.6
5/27/2023		05/27/2023 11:19:00a	1	3.1
5/27/2023		05/27/2023 11:20:00a	1	3.9
5/27/2023		05/27/2023 11:22:00a	2	4.5
5/27/2023		05/27/2023 03:24:00p	1	4.2
5/28/2023	Sunday	05/28/2023 01:12:00p	1	4
5/28/2023		05/28/2023 01:14:00p	1	5.3
5/28/2023		05/28/2023 01:15:00p	1	5.5
5/28/2023		05/28/2023 01:16:00p	2	5.5
5/28/2023		05/28/2023 02:58:00p	1	3.1
5/30/2023	Tuesday	05/30/2023 05:41:00p	3	3.8

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5/30/2023		05/30/2023 05:42:00p	1	3.9
6/1/2023	Thursday	06/01/2023 06:08:00p	1	3.2
6/2/2023	Friday	06/02/2023 04:14:00p	1	3.2
6/2/2023		06/02/2023 04:15:00p	1	4.2
6/2/2023		06/02/2023 08:38:00p	1	4.2
6/4/2023	Sunday	06/04/2023 05:20:00p	1	3.7
6/4/2023		06/04/2023 05:21:00p	1	3.7
6/4/2023		06/04/2023 05:37:00p	1	3.3
6/10/2023	Saturday	06/10/2023 08:15:00p	1	3.1
6/10/2023		06/10/2023 08:34:00p	2	3.3
6/10/2023		06/10/2023 08:35:00p	1	3.1
6/11/2023	Sunday	06/11/2023 01:09:00p	1	3.1
6/11/2023		06/11/2023 01:11:00p	1	3.8
6/17/2023	Saturday	06/17/2023 09:47:00a	1	3.1
6/18/2023	Sunday	06/18/2023 02:36:00p	2	3.5
6/19/2023	Monday	06/19/2023 05:23:00p	2	3.4
6/19/2023		06/19/2023 05:26:00p	1	3.1
6/19/2023		06/19/2023 05:30:00p	1	3.9
6/21/2023	Wednesday	06/21/2023 05:54:00p	2	3.6
6/23/2023	Friday	06/23/2023 02:35:00p	1	3.1
6/23/2023		06/23/2023 02:36:00p	1	3.4
6/23/2023		06/23/2023 02:37:00p	1	4.2
6/23/2023		06/23/2023 08:23:00p	2	3.2
6/23/2023		06/23/2023 08:26:00p	3	3.2
6/24/2023	Saturday	06/24/2023 11:33:00a	1	3.2
6/24/2023		06/24/2023 11:34:00a	1	3
6/24/2023		06/24/2023 02:19:00p	1	4.2
6/24/2023		06/24/2023 06:01:00p	1	4.2
6/24/2023		06/24/2023 07:06:00p	1	3.1
6/24/2023		06/24/2023 09:09:00p	1	3.6
6/24/2023		06/24/2023 09:10:00p	2	3.9
6/24/2023		06/24/2023 09:14:00p	1	4
6/24/2023		06/24/2023 09:16:00p	3	4.1
6/24/2023		06/24/2023 09:20:00p	1	3.1
6/24/2023		06/24/2023 09:42:00p	1	3.2
6/24/2023		06/24/2023 09:46:00p	3	3.6

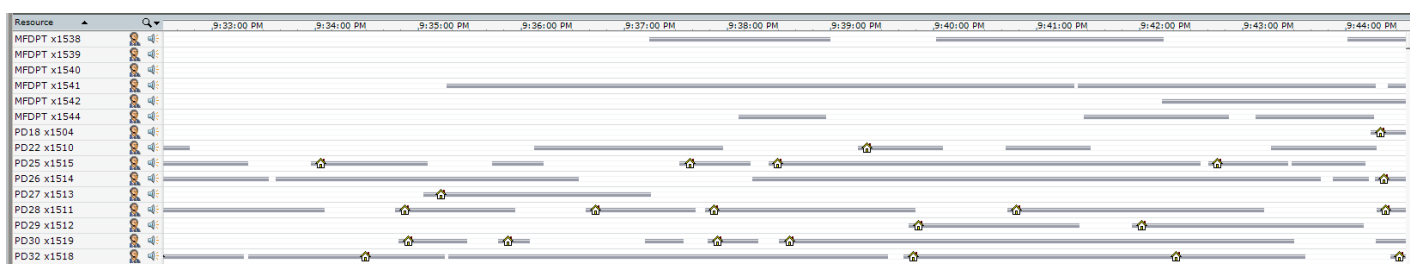
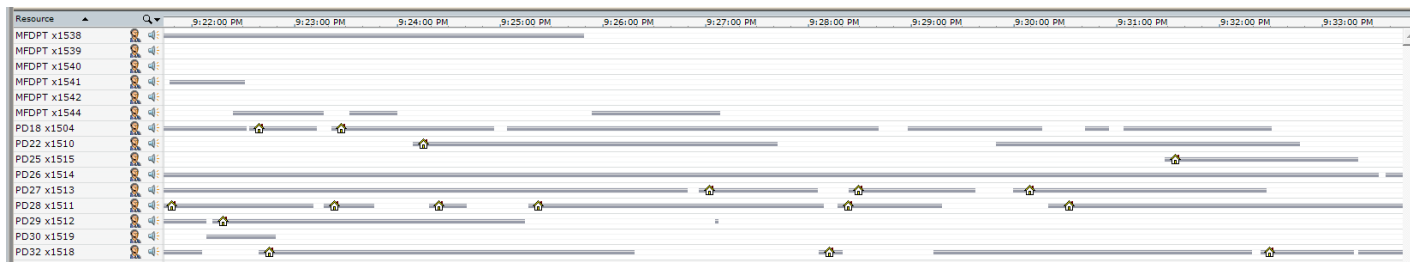
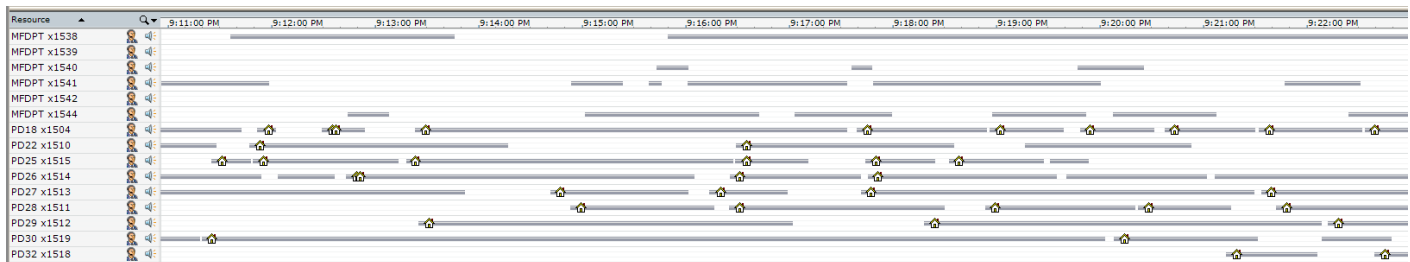
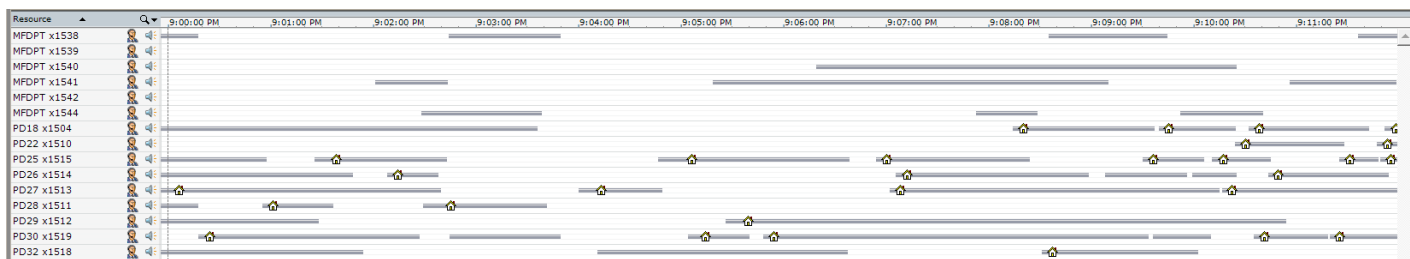
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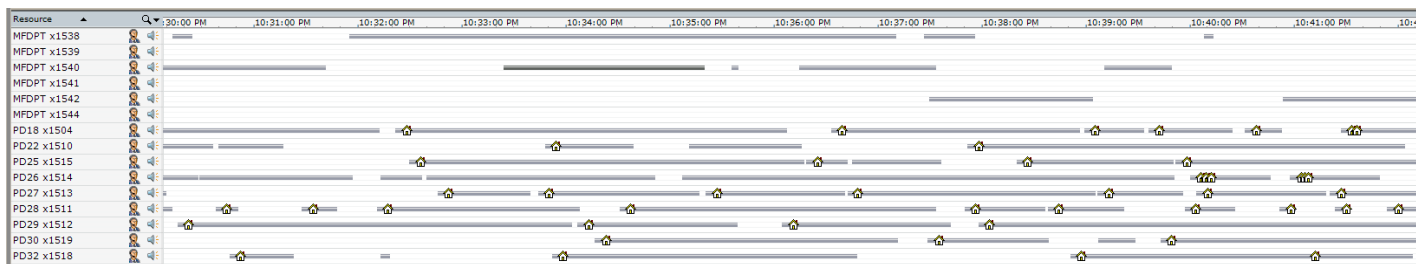
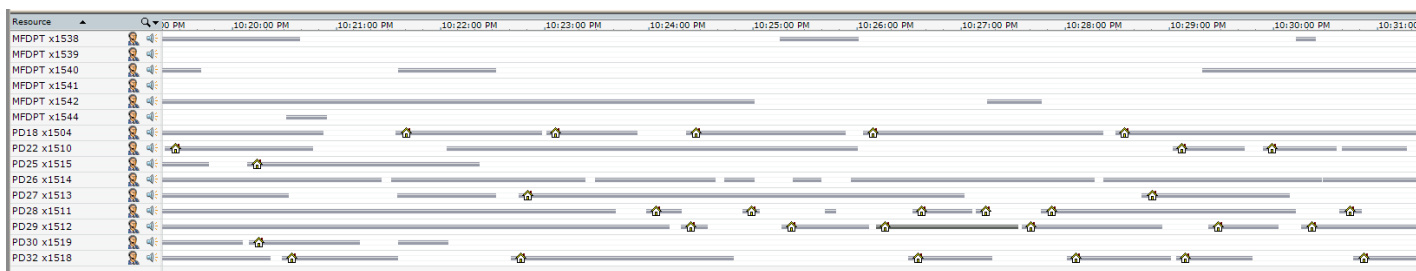
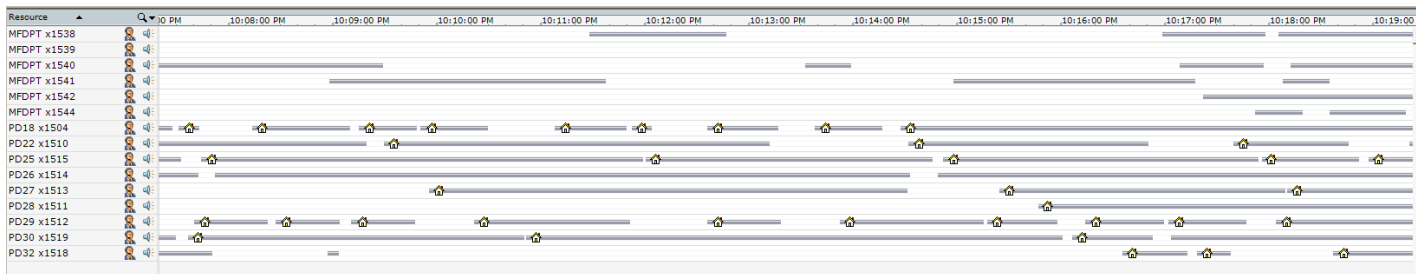
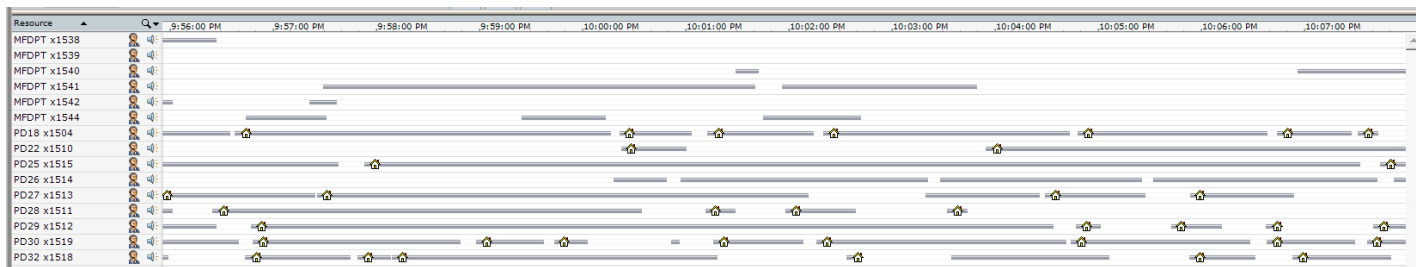
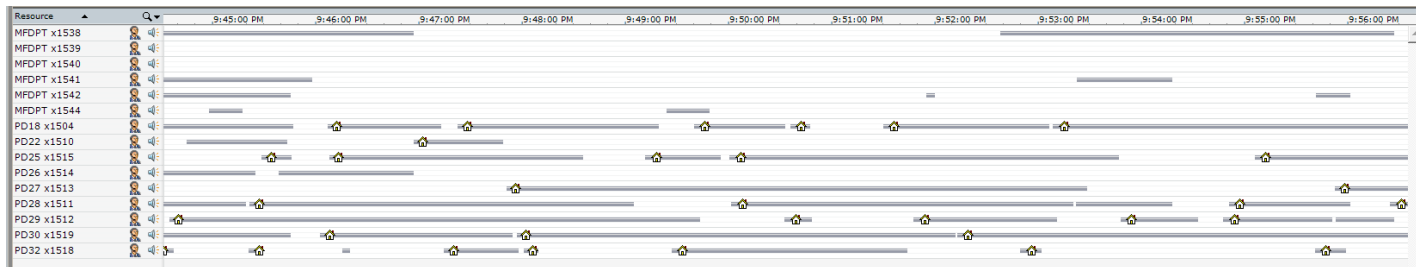
6/24/2023	06/24/2023 09:47:00p	2	4.3
6/24/2023	06/24/2023 09:50:00p	1	3.1
6/24/2023	06/24/2023 09:51:00p	1	4.7
6/24/2023	06/24/2023 09:55:00p	2	4.7
6/24/2023	06/24/2023 09:56:00p	2	3.2
6/24/2023	06/24/2023 10:03:00p	1	3.7
6/24/2023	06/24/2023 10:04:00p	1	4.3
6/24/2023	06/24/2023 10:05:00p	1	3.2
6/24/2023	06/24/2023 10:06:00p	1	3.8
6/24/2023	06/24/2023 10:07:00p	2	4.5
6/24/2023	06/24/2023 10:09:00p	2	5.2
6/24/2023	06/24/2023 10:10:00p	1	5.6
6/24/2023	06/24/2023 10:12:00p	1	5.6
6/24/2023	06/24/2023 10:14:00p	2	7.9
6/24/2023	06/24/2023 10:15:00p	1	7.3
6/24/2023	06/24/2023 10:16:00p	1	7.8
6/24/2023	06/24/2023 10:17:00p	2	7.9
6/24/2023	06/24/2023 10:18:00p	2	6.6
6/24/2023	06/24/2023 10:19:00p	1	6.2
6/24/2023	06/24/2023 10:20:00p	2	6.1
6/24/2023	06/24/2023 10:22:00p	1	7.3
6/24/2023	06/24/2023 10:28:00p	1	11
6/24/2023	06/24/2023 10:29:00p	2	7.5
6/24/2023	06/24/2023 10:32:00p	2	8.2
6/24/2023	06/24/2023 10:33:00p	2	3.3
6/24/2023	06/24/2023 10:35:00p	1	3.6
6/24/2023	06/24/2023 10:36:00p	2	4
6/24/2023	06/24/2023 10:37:00p	3	3.3
6/24/2023	06/24/2023 10:38:00p	1	3.3
6/24/2023	06/24/2023 10:39:00p	1	3.3
6/24/2023	06/24/2023 10:55:00p	1	3.3
6/24/2023	06/24/2023 10:59:00p	1	3.7
6/24/2023	06/24/2023 11:02:00p	1	3.4
6/29/2023 Thursday	06/29/2023 11:30:00p	2	3.1

Exhibit “C” - NICE Recording System Snapshot – June 24, 2023 9:00pm – 11:25pm

- Each house icon is an active 9-1-1 call
- Lines with no house icon are non-emergency
- The lines show Total Talk Time for that call
- Each section is a snapshot of X minutes starting at 9:00pm and concluding at 11:25pm



City of Milwaukee Public Safety Enhancement Program



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