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Memorandum

To: Honorable Members of the Milwaukee Common Council

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

Date: August 14, 2024

RE: MPD and MFD Response Times

This memorandum is an updated response to a Public Safety and Health Committee's request for information regarding response times from emergency 911 call to dispatch and from dispatch to appearance on scene. Data was provided by MPD's Office of Management, Analysis, and Planning (OMAP) and by MFD's Support Bureau. The initial memorandum, dated October 9, 2023, covered an 18-month period from January 2022 to June 2023. The last update compared the additional 6-month period from July to December 2023. This update compares January to June 2024 (Q1 & Q2 2024) with July to December 2023 (Q3 and Q4 2023).

The most notable difference between the two periods is a reduction in Call to Dispatch time of about 1.5 (MFD) to 2 (MPD) minutes. This may be attributable to the implementation of the new Hexagon CAD system in February 2024.

MPD RESPONSE TIMES

MPD Priority Categories

Until February 20, 2024, MPD categorized calls using the Tiburon CAD system generating a squad response as Priority E through 4. Since that date, the CAD system has been updated to the Hexagon I/CAD system, which uses priority levels 0 through 7. This report focuses on Priority 1 calls before February 20, 2024, and on Priorities 1 and 2 since that date, as those levels most closely match. See Appendices 1 and 2 for definitions of the priority levels. Priority 0 since February 2024 is comparable to Priority E from before February 20, 2024.

OMAP issues quarterly reports of response times from call received to presence on scene for all priority levels. The results for Q3&4 2023 and Q1&2 2024 are as follows:¹

Tiburon CAD results:

Dispatched Calls for Service	July-Sept 2023		Oct-Dec 2023		Jan-Feb 20, 2024	
Priority	Total	Median (mins:secs)	Total	Median (mins:secs)	Total	Median (mins:secs)
1	20,229	11:34	17,009	11:37	8,665	11:30
2	27,603	20:50	24,560	20:50	12,807	18:50
3	19,298	50:19	16,870	48:22	8,767	37:03
4	4,653	28:30	3,826	26:16	2,070	25:02
E	11	04:31	14	11:43	10	10:55
Total/Overall	71,794	20:02	62,279	20:00	32,319	18:32

Hexagon CAD results:

Dispatched Calls for Service	Feb 20-March 2024		April-June 2024	
Priority	Total	Median (mins:secs)	Total	Median (mins:secs)
0	2	05:33	27	5:36
1	3,295	08:26	9,592	8:57
2	3,218	11:00	8,290	12:19
3	5,746	18:33	15,536	20:06
4	2,333	17:51	5,632	21:22
5	951	32:27	2,409	38:38
6	7,632	25:04	18,197	32:20
7	1,987	20:21	5,365	27:48
Total/Overall	25,164	15:35	65,048	17:31

¹ Dispatched calls for service exclude: calls which do not result in a squad response, misdials, training units and training calls, calls that have no primary unit assigned, and calls with a disposition of: Cancelled, Differential Response Unit (DRU), License Investigation Unit (LIU), Milwaukee County Sheriff's Office (MCSO), or Milwaukee Fire Department (MFD). Additional exclusions are made to calculate response times, which results in fewer dispatched calls for service. Response times exclude any dispatched calls for service with a negative response time (due to daylight savings), calls with a response time greater than 24 hours, and calls that do not contain an on-scene time. Created Date/Time represents the moment a 911 call is made to and received by Technical Communications Division (TCD).

MPD PRIORITY ONE CALL-TO-DISPATCH AND DISPATCH-TO-ON SCENE RESULTS

The data analyzed was taken from both the old (Tiburon) and the new (Hexagon) CAD systems and consists of 32,957 calls (Priority 1 calls in Tiburon plus Priority 1 and 2 calls in Hexagon) made during the period studied, from January through June 2024. Calls as defined in Footnote 1 above were excluded.

Of those 32,957 calls, 234 are recorded as taking zero minutes (less than 30 seconds due to rounding) from call created to on scene. According to OMAP, “This may be due to the fact the squad went out with the call for service and were then immediately dispatched (e.g., they may have been flagged down by the caller, they were on scene immediately, they observed the crime in progress, or they saw the call for service pending and went out with it right away before being dispatched).”

Call times for the period studied are compared to the prior 6-month period studied as follows. As can be seen in the table, the main difference between Q3&4 2023 and Q1&2 2024 is a 2-minute reduction in both the mean and median call-to-dispatch time. This may be attributable at least in part to the implementation of the new Hexagon I/CAD system.

Priority 1 Response Times (Minutes)

	July-December 2023		January-June 2024	
	Mean	Median	Mean	Median
Call to Dispatch	7	4	5	2
Dispatch to On Scene	9	7	9	7
Call to On Scene	16	12	13	10

The median (at which the number of smaller and larger results is equal) is lower than the mean (average) and is a more meaningful measure of response times generally because the few extremely high results skew the mean upward.

The total of calls by district (32,881) is slightly lower than the total number of calls including those that are not attributable to a district (32,957).

Call to Dispatch Response Times (minutes)

District	July 2023 - December 2023 (6 mos.)			January 2024 - June 2024 (6 mos.)		
	Total Calls	Mean	Median	Total Calls	Mean	Median
1	1,531	6	4	1,356	4	2
2	4,649	6	4	4,158	4	2
3	6,886	6	4	6,391	5	2
4	5,131	9	5	5,207	7	3
5	7,704	6	4	6,763	5	2
6	1,872	6	4	1,741	5	2
7	7,453	7	4	7,265	5	2
Overall	35,226	7	4	32,881	5	2

Dispatch to On Scene Response Times (minutes)

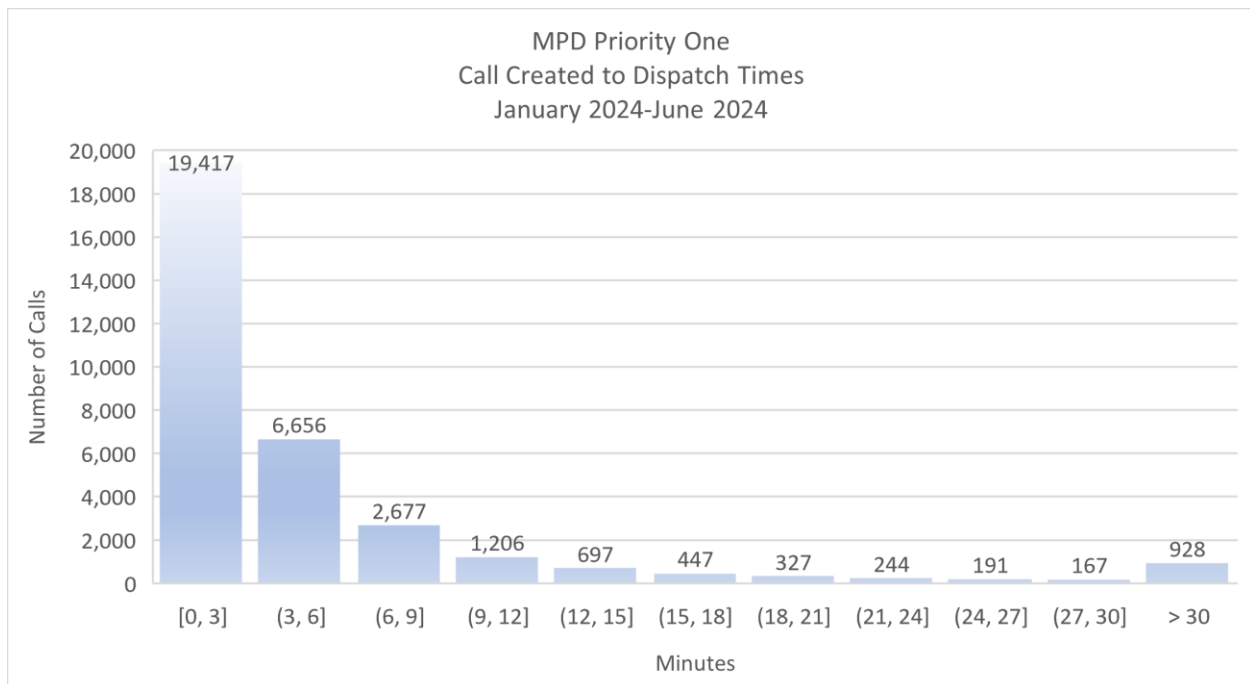
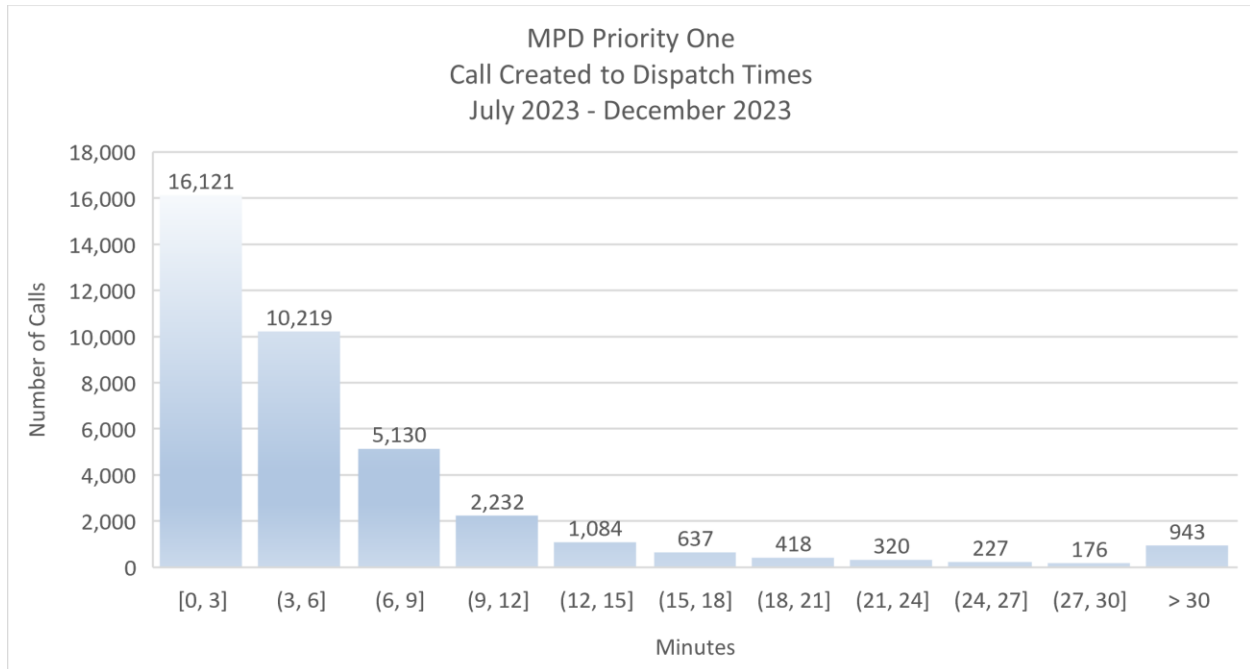
District	July 2023 - December 2023 (6 mos.)			January 2024 - June 2024 (6 mos.)		
	Total Calls	Mean	Median	Total Calls	Mean	Median
1	1,510	8	6	1,356	7	5
2	4,571	8	6	4,158	7	6
3	6,766	10	8	6,391	9	7
4	5,092	11	10	5,207	11	9
5	7,539	9	7	6,763	8	6
6	1,850	9	8	1,741	8	7
7	7,319	9	8	7,265	9	7
Overall	34,647	9	7	32,881	8	7

Call to On Scene Response Times (minutes)

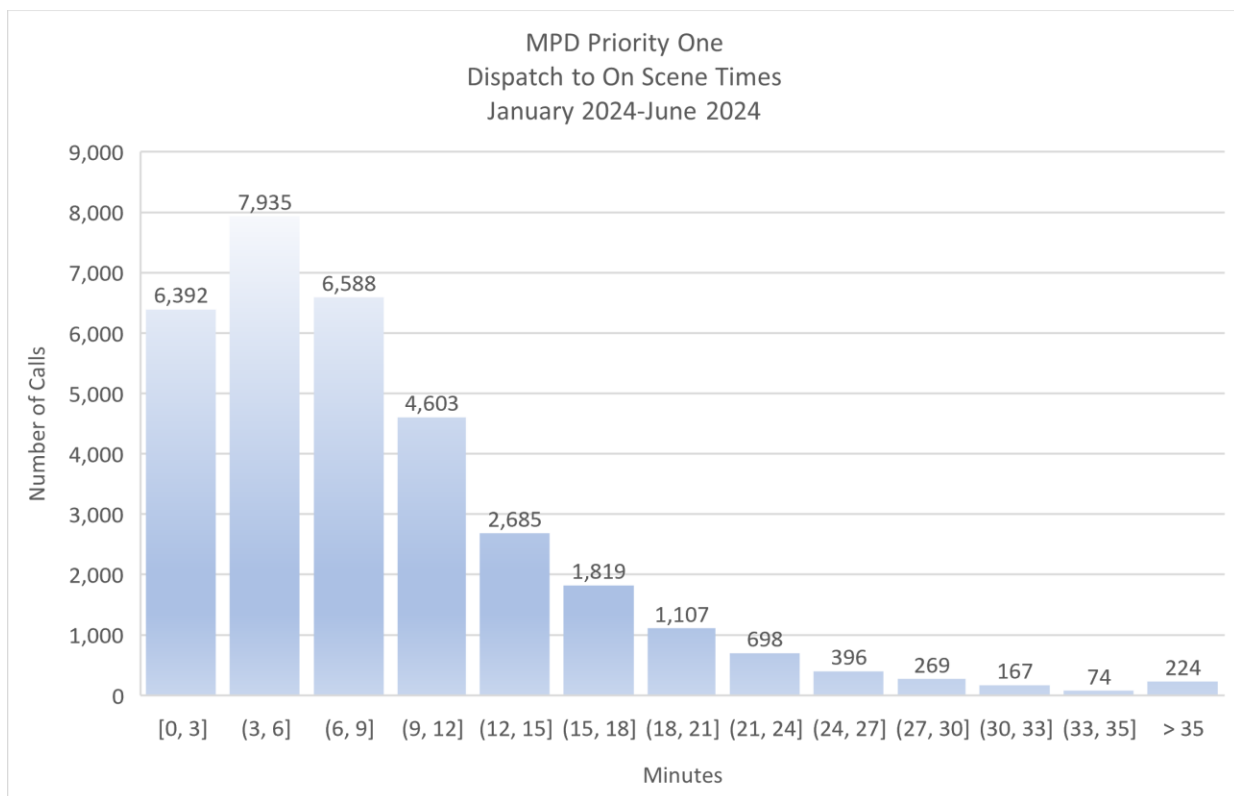
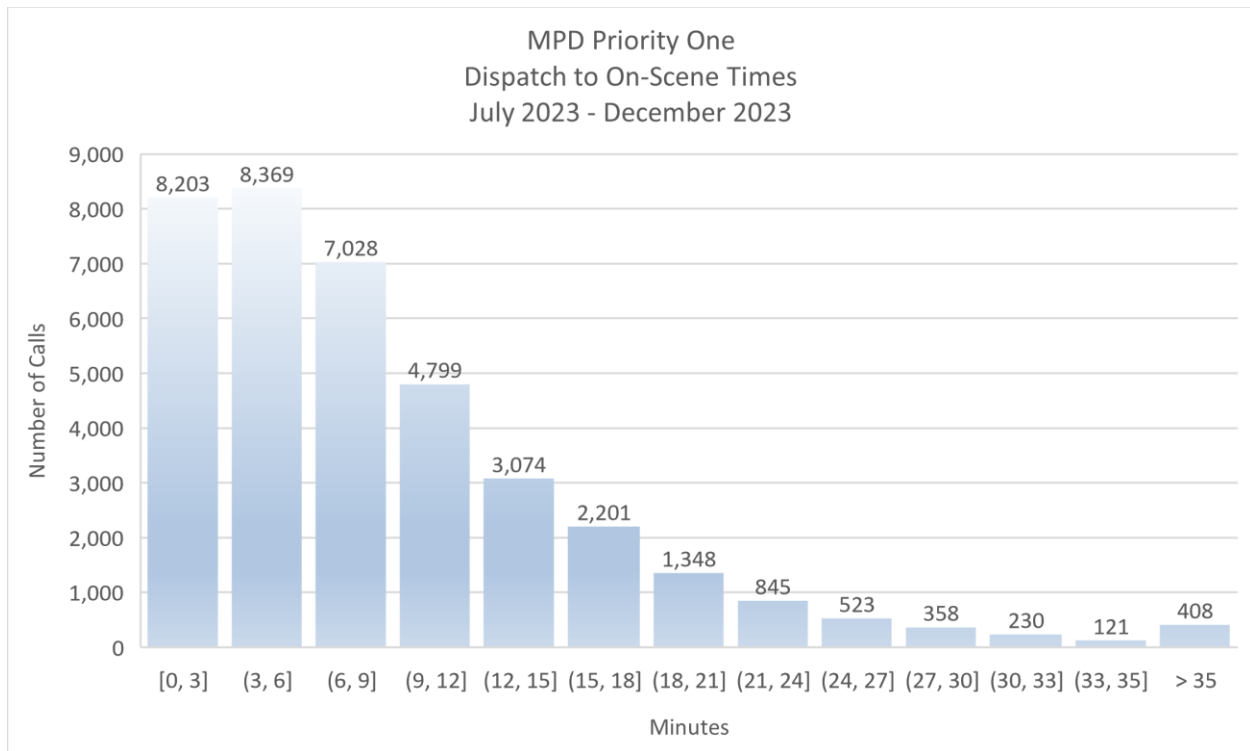
District	July 2023 - December 2023 (6 mos.)			January 2024 - June 2024 (6 mos.)		
	Total Calls	Mean	Median	Total Calls	Mean	Median
1	1,544	14	10	1,356	11	8
2	4,669	14	11	4,158	11	8
3	6,906	16	12	6,391	13	10
4	5,148	20	15	5,207	17	14
5	7,719	15	11	6,763	13	10
6	1,878	16	12	1,741	13	10
7	7,465	16	12	7,265	14	11
Overall	35,329	16	10	32,881	13	11

The distribution of response times is as shown in the histograms below. The notation (a,b] on the intervals is to be read “from a to b.” In each category (Call Created to Dispatch, etc.), the results from Q3&4 2023 are shown first and then the results from the Q1&2 2024 update are shown for comparison. As can be seen, the distribution of call-to-dispatch response times showed the greatest improvement, owing to the 2-minute improvement in median response time, which may be attributable to the implementation of the Hexagon I/CAD system during February 2024.

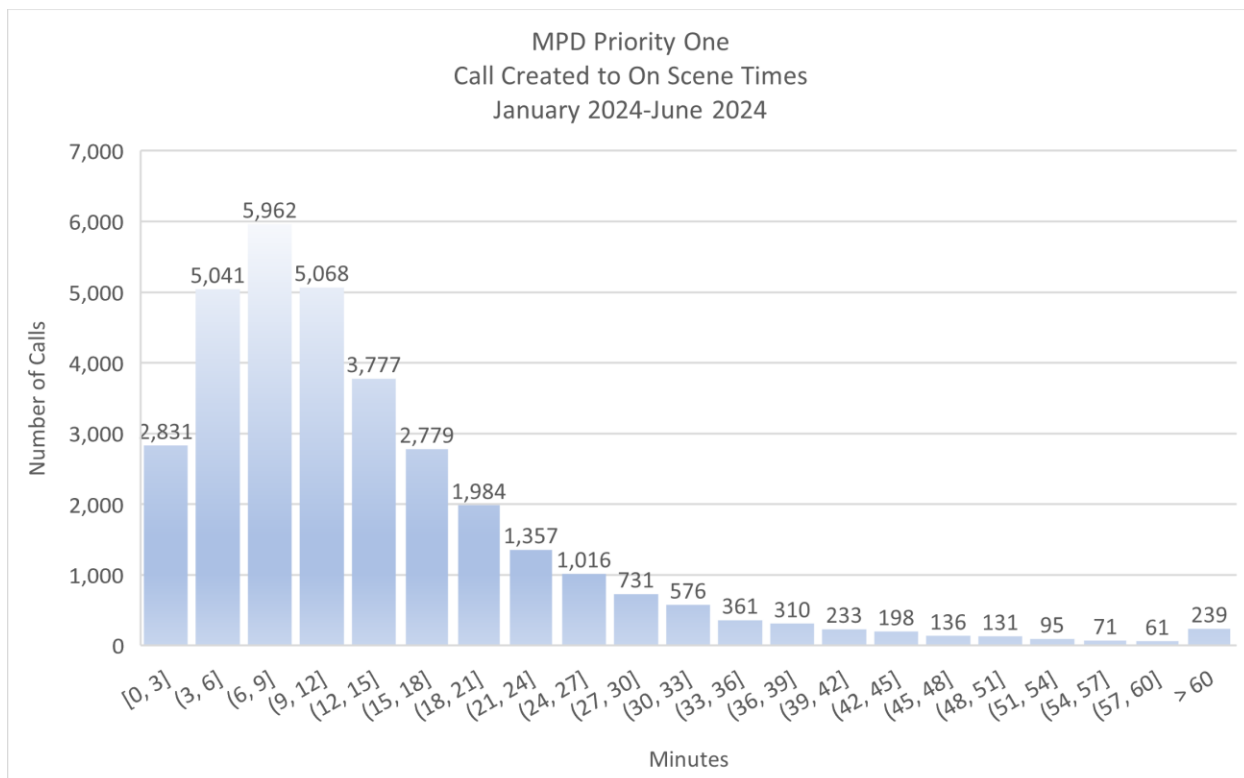
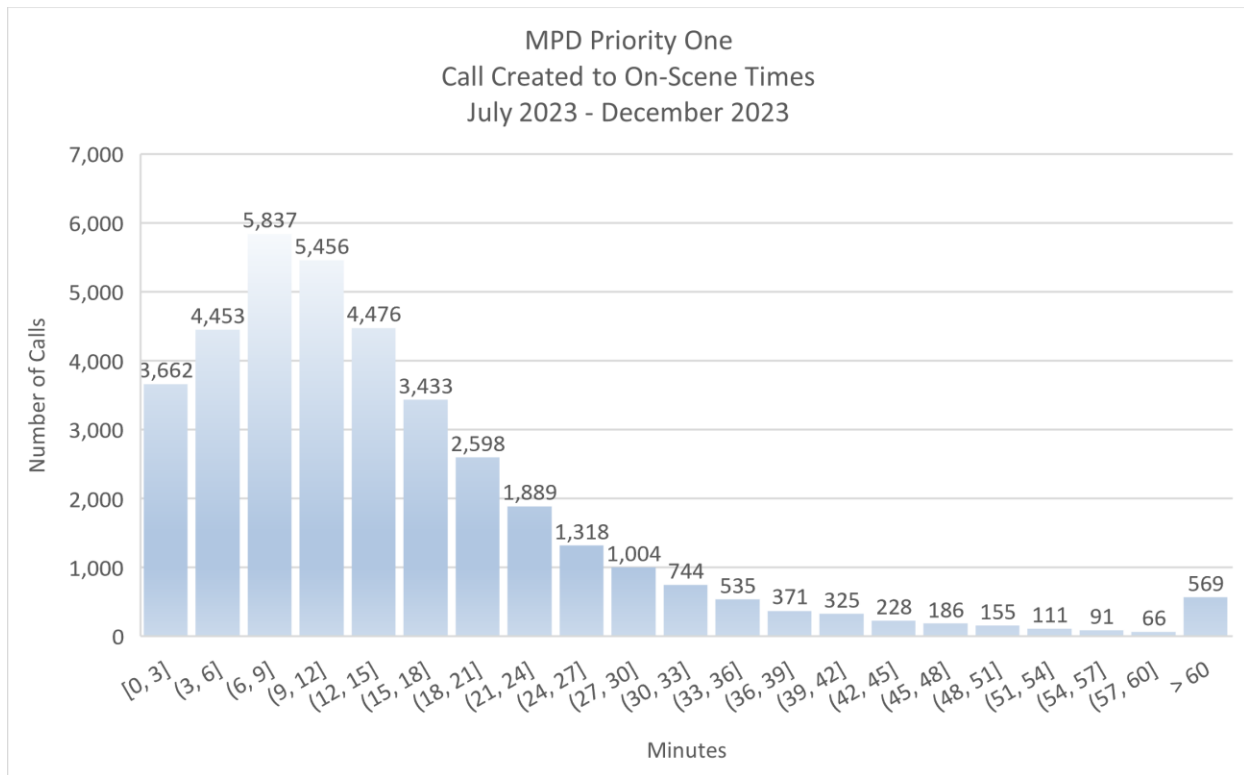
Call Created to Dispatch Times



Dispatch to On-scene Times



Call Created to On-Scene Times



MFD RESPONSE TIMES

MFD categorizes its calls for service by type of call rather than by priority. Calls analyzed here are grouped as All Emergency Medical Services (EMS), Building Fires (first vehicle on scene), and All Fires (first vehicle on scene).

As can be seen in the following response times tables for each category, the main difference between Q3&4 2023 and Q1&2 2024 is a 1.3- to 1.4-minute reduction in the median call-to-dispatch time. This may be attributable at least in part to the standing up of the new Hexagon CAD system.

Total calls for service for the two periods studied are:

	July - December 2023	January - June 2024
EMS	51,505	50,154
Building Fires	248	428
All Fires	1,305	734

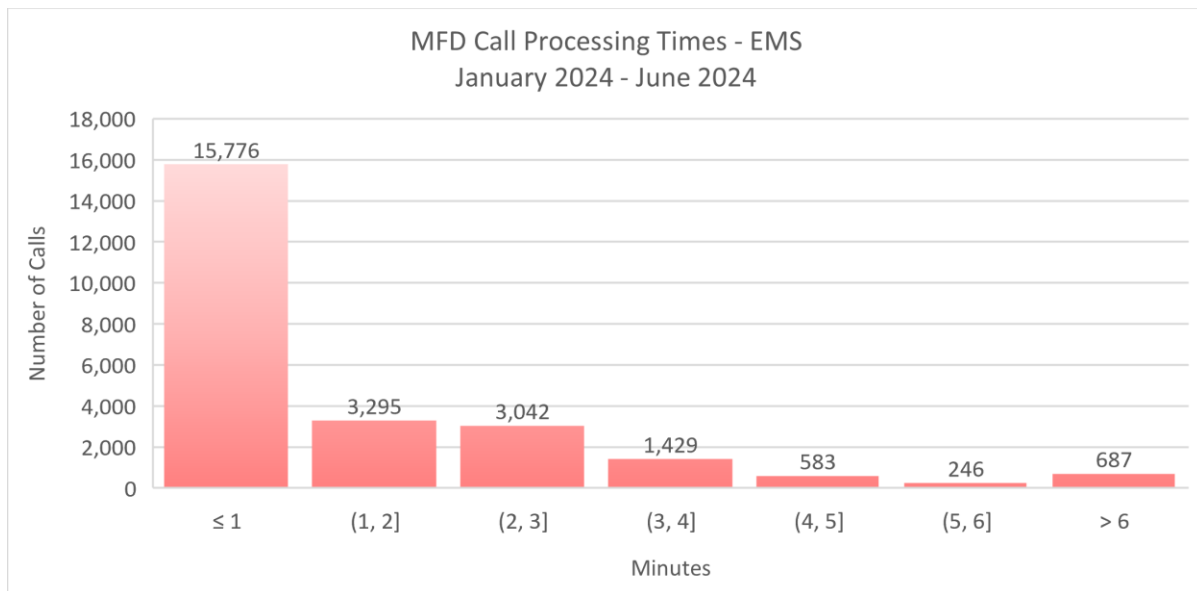
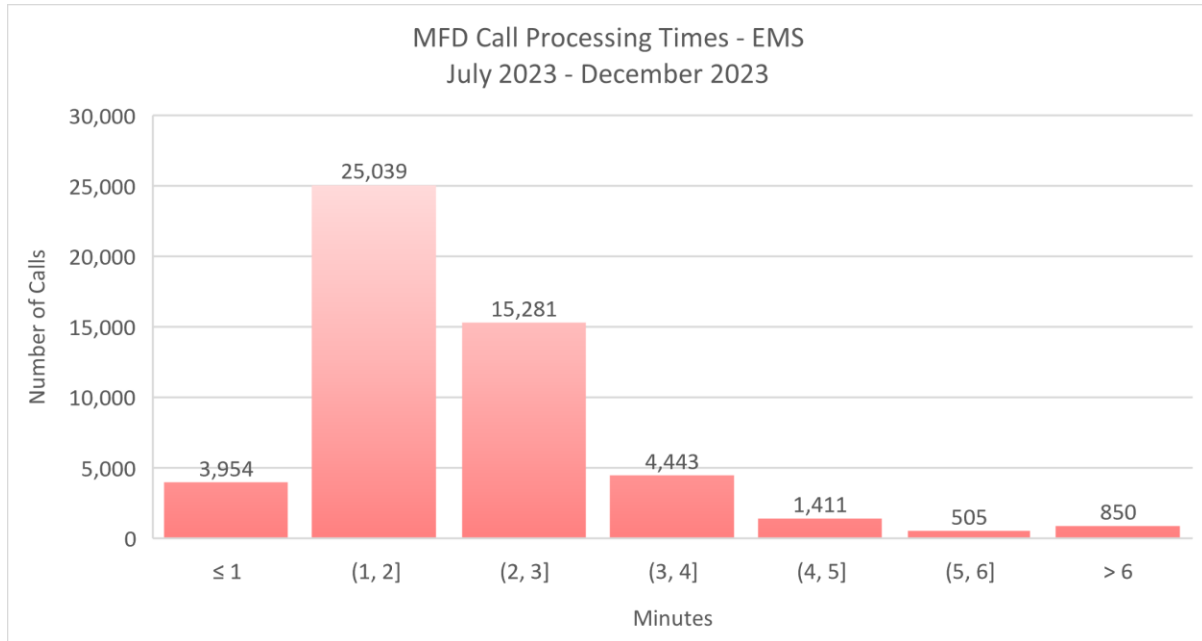
MFD EMS CALL PROCESSING AND TRAVEL TO ON SCENE TIMES

In these results, the medians are more meaningful than the means because the means are skewed by relatively few extreme examples.

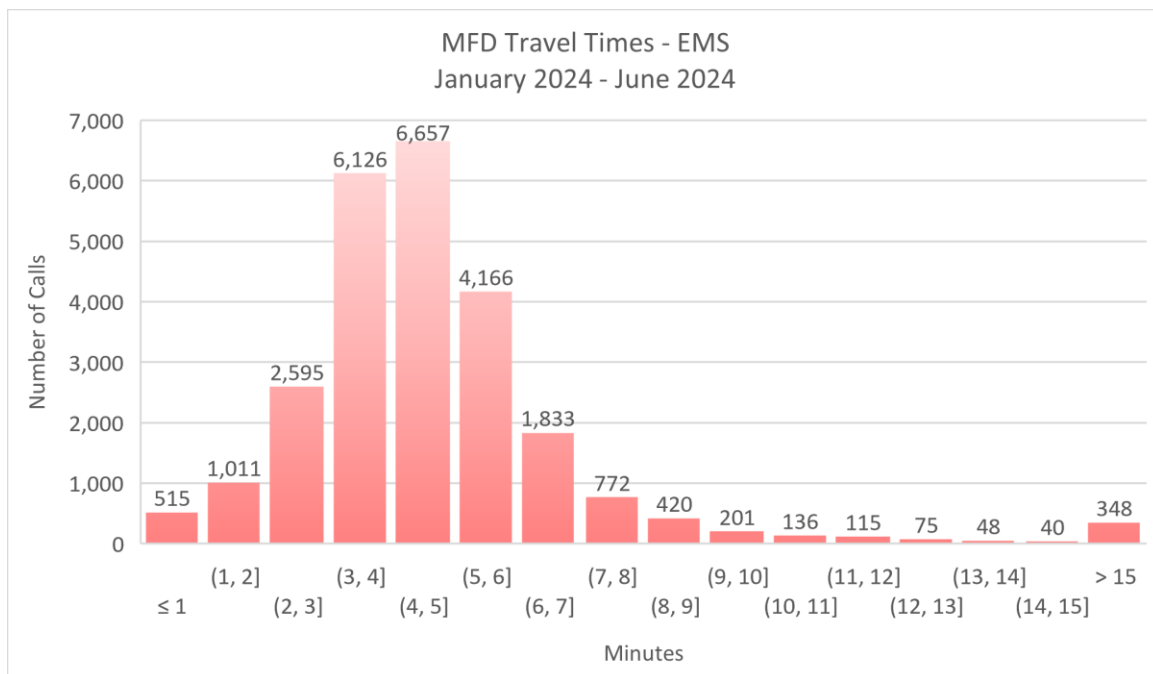
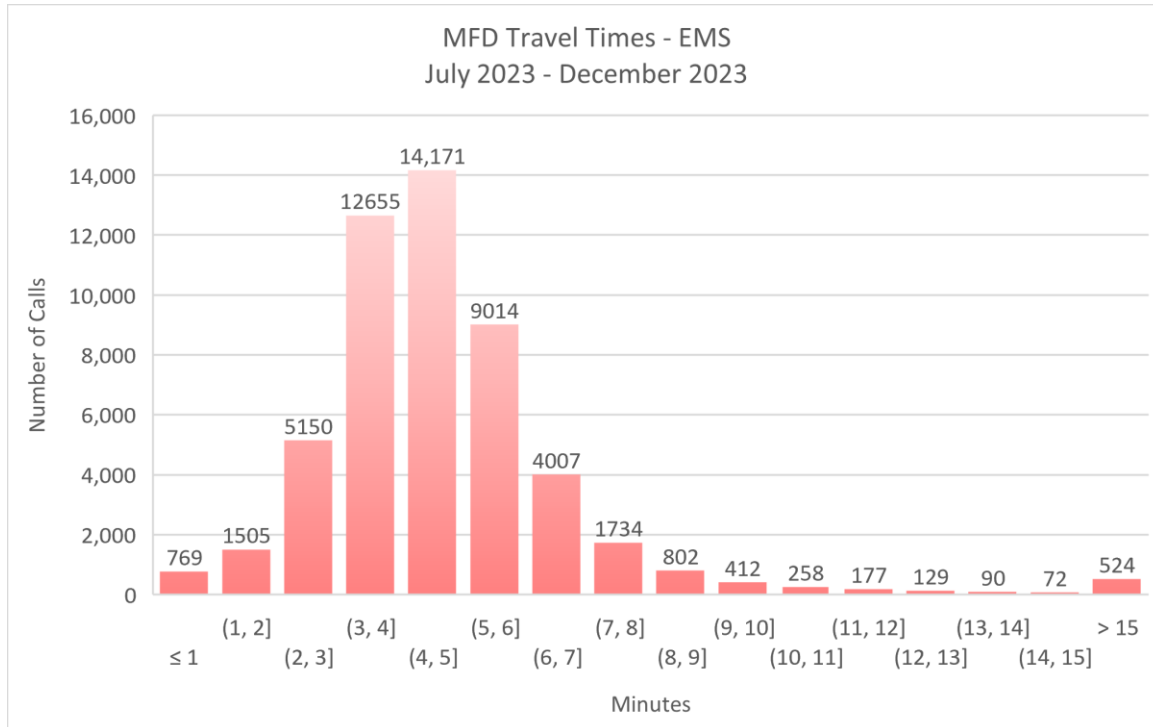
EMS Response Times (Minutes)				
	July - December 2023		January - June 2024	
	Mean	Median	Mean	Median
Call Processing	2.4	1.9	2.1	0.5
Travel Time	5.5	4.4	5.3	4.3

The distribution of EMS call processing and travel times for the entire 12-month period analyzed is as shown in the histograms below. The notation (a,b] on the intervals is to be read “from a to b.”

EMS Call Processing Times



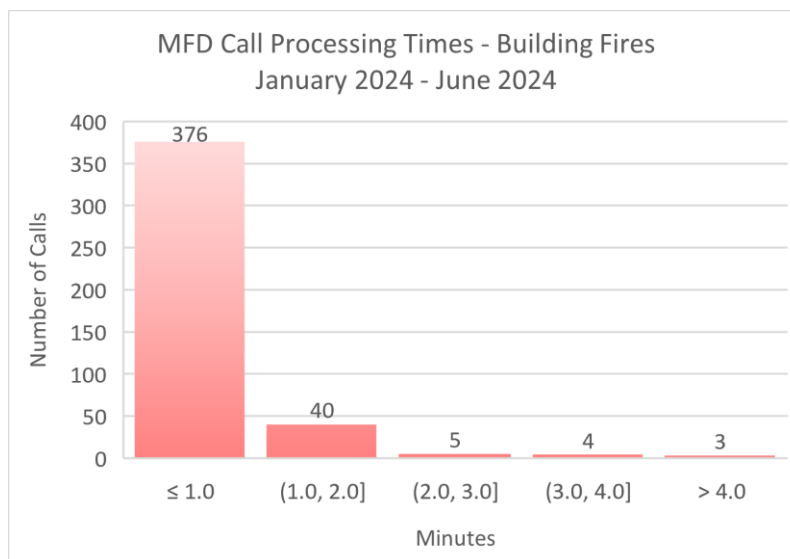
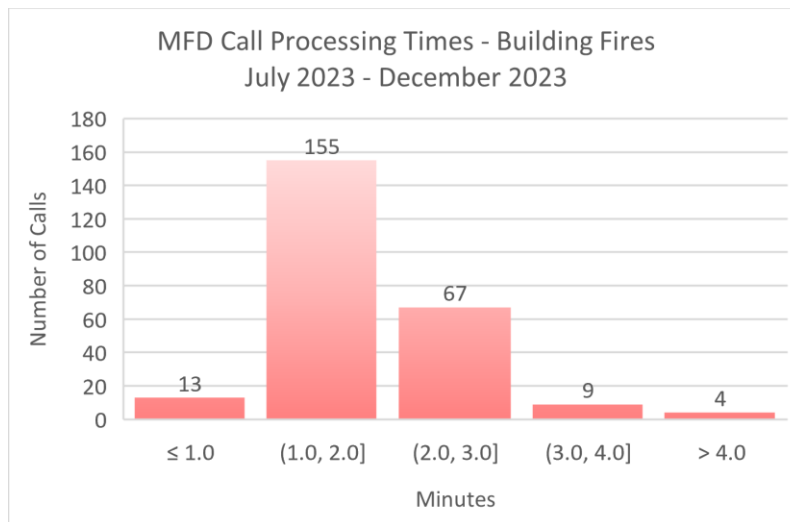
EMS Travel Times



MFD BUILDING FIRE RESPONSE TIMES (1ST Vehicle on Scene)

Building Fire Response Times (Minutes)				
	July-December 2023		January-June 2024	
	Mean	Median	Mean	Median
Call Processing	1.9	1.7	0.5	0.3
Travel Time	2.7	2.6	4.5	3.7

The distribution of building fire call processing and travel times for the period analyzed is as shown in the histograms below. The notation (a,b] on the intervals is to be read “from a to b”.

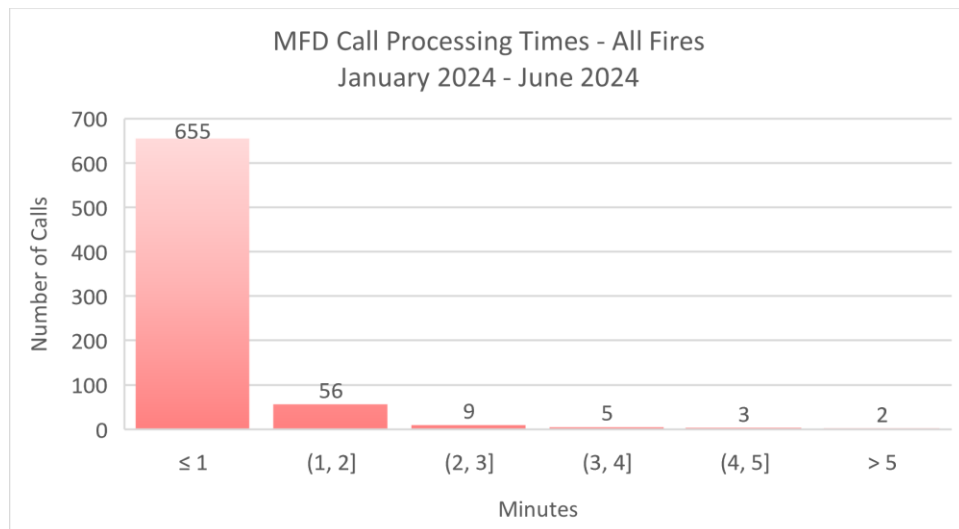
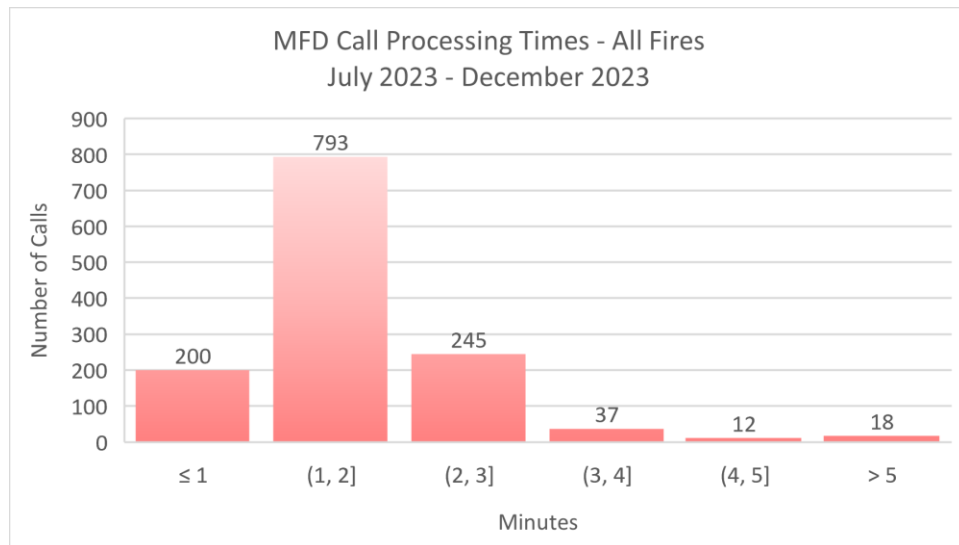


RESPONSE TIMES ALL MFD FIRES (1st Vehicle on Scene)

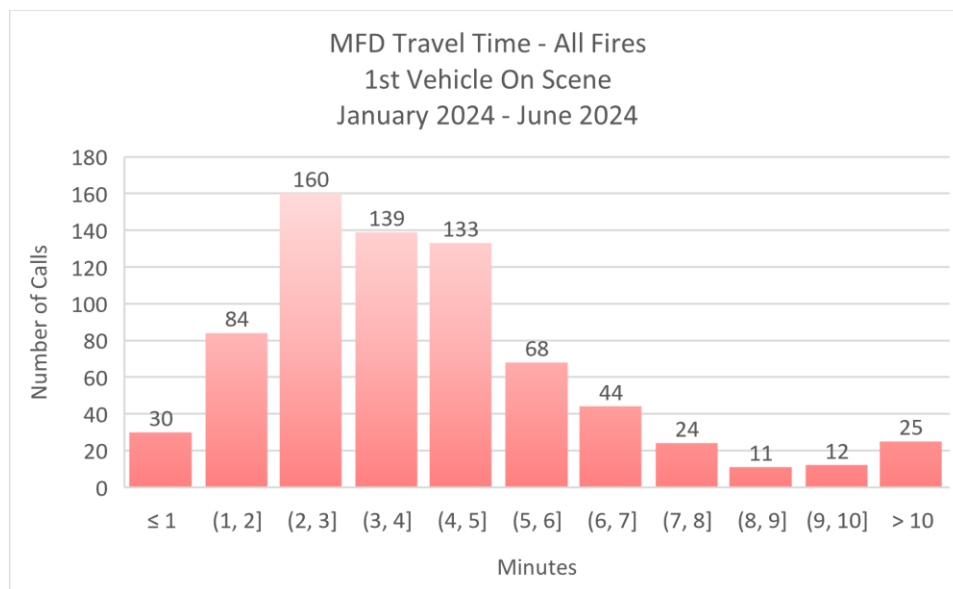
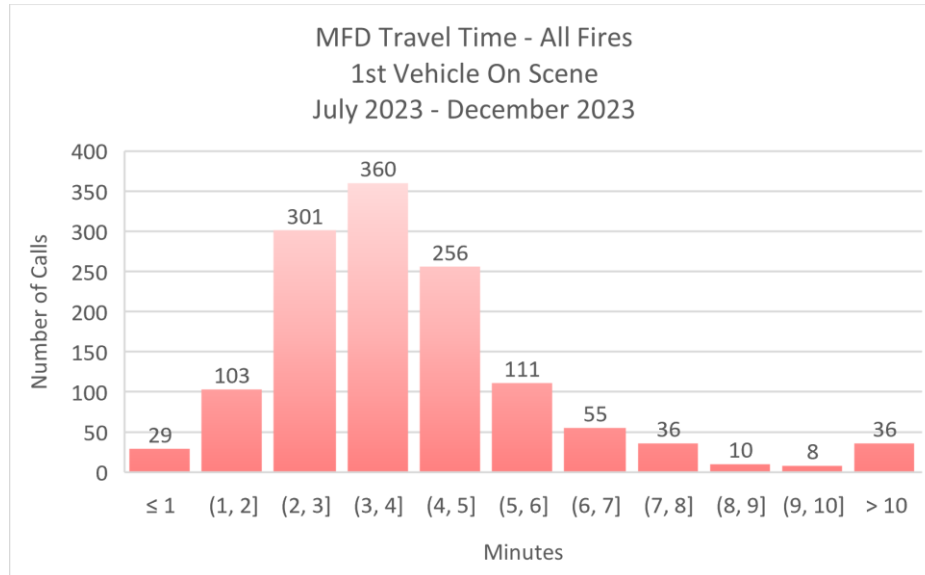
Response Times - All Fires (Minutes)				
	July-December 2023		January-June 2024	
	Mean	Median	Mean	Median
Call Processing	1.8	1.5	0.4	0.2
Travel Time	4.0	3.6	4.1	3.6

The distribution of response times for all fire calls, including 2nd and 3rd alarm building fires, for the period analyzed is as shown in the histograms below. The notation [a,b] on the intervals is to be read “from a to b”.

Call Processing All Fires



Travel Time All Fires – 1st Vehicle on Scene



APPENDIX A
MPD Priority Levels until February 20, 2024 (Tiburon System)

Priority E (Emergency) is for emergency situations and non-pre-emptable assignments (e.g., assists, officer down, park and walks). [A Park and Walk is when the officer notifies dispatch they are on foot patrol outside of their squad and are walking in a specific area.]

Priority One calls are for situations involving life-threatening conditions:

1. All calls for service regarding life threatening incidents that:
 - a. Are in progress;
 - b. Are not in progress, but the suspect is on the scene;
 - c. Just occurred (5 minutes or less) and it is reasonable to assume that the suspect may still be in the area (e.g., armed robbery just occurred, burglary - unknown if suspect(s) are still on the scene).
2. Any incident of an emergency nature that threatens human life or great bodily harm (e.g., gas leak, explosive device, sniper).
3. Any criminal incident to which an ambulance is sent (e.g., battery, sexual assault).
4. All gunshot detections via ShotSpotter (verified detections will be immediately broadcast upon receipt by dispatchers on the radio talk group of the district involved).

Priority Two calls are for situations involving major property threatening conditions, accidents involving injury, or incidents reporting a non-specific complaint of injury or illness not as a result of criminal actions:

1. All calls for service regarding major property threatening incidents that:
 - a. Are in progress (e.g., entry to autos in progress);
 - b. Are not in progress, but the suspect is on the scene;
 - c. Just occurred (5 minutes or less) and it is reasonable to assume that the suspect may still be in the area (e.g., theft that just occurred).
2. Any felony or misdemeanor which did not involve life threatening conditions, that recently occurred and the logical probability exists that the suspect is near the scene, in the area, or a high probability of apprehension exists (e.g., burglar alarm, drug dealing, entry to auto).
 - a. Accidents involving injury (e.g., personal injury traffic accidents, industrial accidents)
 - b. Any non-specific complaint of personal injury or illness not as a result of criminal actions (e.g., injured/sick person, check the welfare).

Priority Three calls are for situations not requiring an immediate response to prevent personal injury or property loss/damage and situations indicating criminal activity for report purposes only:

1. Any incident that does not require immediate police response to prevent personal injury or property loss/damage (e.g., crash – property damage only, trouble with subject, shoplifter).
2. Any recent incident wherein the preservation of evidence or protection of the crime scene is not of an urgent nature (e.g., property damage, entry, battery).
3. Any felony or misdemeanor not in progress that does not require immediate investigation (e.g., theft, violation of restraining order).

Priority Four calls are for situations of a minor nature that do not fall within the above priority categories.

1. Any incident that involves an apparent minor violation or offense (e.g., noise nuisance).
2. Any incident that involves non-criminal police services (e.g., escort, notifications).
3. Any incident of a minor nature, not in progress, that requires follow-up investigation (e.g., recovered property, 911 abuse).

APPENDIX B
MPD Priority Levels since February 20, 2024 (Hexagon System)

Priority Zero calls are for incidents that are in-progress, just occurred, or recent in time that involve life threatening situations and substantial / aggravated harm to a person or persons, and mass casualty events (immediate dispatch).

- a. Active Attack
- b. Demonstration (aggressive)
- c. Explosion

Priority One calls are for incidents that are in-progress or just occurred that have the high probability to involve harm, substantial / aggravated harm, or active threat to life of a person or persons with the use of some type of weapon or instrument (immediate dispatch).

- a. Robbery (in-progress or just occurred)
- b. Shooting
- c. Stabbing / Cutting (in-progress or just occurred)

Priority Two calls are for incidents that are in-progress or just occurred that have the high probability to involve harm, substantial / aggravated harm, or active threat to life of a person or persons. The use of a weapon or instrument is either not known or there is no weapon present (immediate dispatch).

- a. Battery/Fight/Assault (in-progress)
- b. Entry-Building or Structure (in-progress)

Priority Three calls are for incidents that are in-progress or just occurred where the level of potential harm to a person or person is unknown, as well as critically missing persons, or a person who presents a danger to themselves or others due to an emotional disturbance (dispatch within 15 minutes).

- a. Emotionally Disturbed Person (EDP) (non-violent)
- b. Missing Report (critical)

Priority 4 calls are for incidents that are in-progress or just occurred that threatens the loss or damage of property of any value; but presents no significant threat of harm, substantial / aggravated harm, or active threat of life to a person or persons (dispatch within 15 minutes).

- a. Property Damage (in-progress)

- b. Theft (in-progress)

Priority 5 calls are for incidents that may or may not be in-progress but have no immediate threat of harm, substantial / aggravated harm, or active threat of life to a person or persons, or loss/damage of property; however, the incident involves a person or persons in need of assistance and a response (dispatch within 45 minutes).

- a. Battery / Fight / Assault (report)
- b. Suicide Attempt (at hospital)

Priority 6 calls are for incidents that may or not be in-progress, have no immediate threat of harm, substantial / aggravated harm, or active threat of life to a person or persons, or loss/damage of property; however, the incident involves a person or persons causing a disturbance, nuisance violations, apparent minor violations/offenses, or non-criminal police services (dispatch within 45 minutes).

- a. Trouble (Subject / Juvenile / Family)
- b. Animal Loose (non-vicious)

Priority 7 calls are for incidents that are not in-progress and have no immediate threat of harm, substantial / aggravated harm, or active threat of life to a person or persons, or loss/damage of property and do not require immediate police response. Incidents include the need for police to investigate and report or provide some type of police service (dispatch within 60 minutes).

- a. Found Property / Recovered (no weapon involved)
- b. Noise

Priority 8 calls are for officer self-initiated activity that does not require immediate emergency assistance.

- a. Traffic Stop
- b. Subject Stop

Priority 9 calls are for documented 911 calls and fire transfer calls which do not require police response.