SANTA BARBARA
FIRE DEPARTMENT
2021

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NOTES ON DATA VALIDATION 3

TABLES AND GRAPHS

The data upon which the department relies for this report comes from the department's computer aided dispatch system (CAD) operated by the city's police department.

For purposes of characterizing the amount of time it takes to accomplish certain tasks, data was trimmed to exclude outliers and each time interval calculated we trimmed using the same statistical convention. With the exception of call processing times, the intervals analyzed were limited to certain types of apparatus and only the first unit on scene. For call processing, the analysis is for the first unit dispatched.

Subsequent units may have higher upper thresholds. Incoming mutual aid, if any, is not accounted for in this analysis.
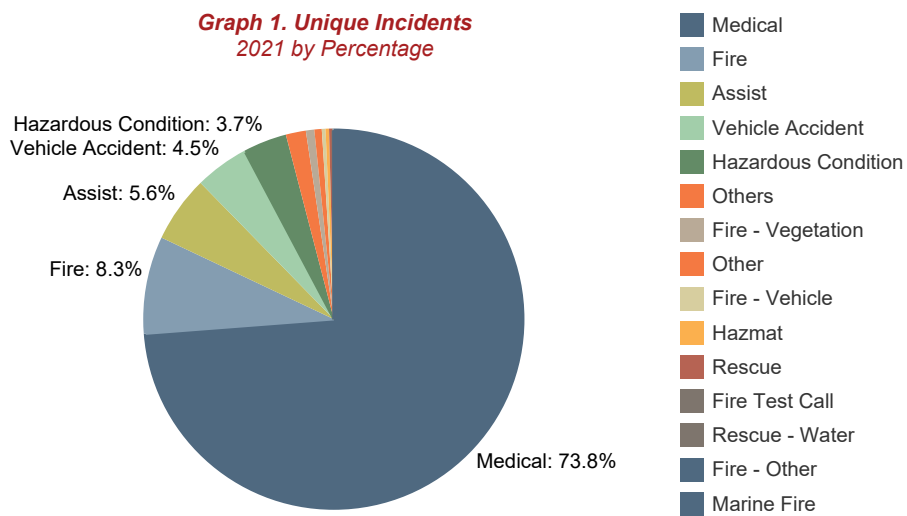
Outgoing aid by Santa Barbara units has been included in the overall statistics of department call volume and commitments, but excluded from response time analyses.

Table 1 below identifies the number of unique incidents by incident type responded to by at least one Santa Barbara unit during the identified period and compared to the prior year.

Table 1. Unique Incidents
2020 and 2021 Compared

Call Group	2020		2021	
	# of Incidents	% of Total	# of Incidents	% of Total
Assist	594	5.52%	651	4.86%
Fire	1,197	13.97%	1,258	12.88%
Fire - Other			3	0.14%
Fire - Veget..	37	1.33%	74	2.35%
Fire - Vehicle	26	0.50%	36	0.54%
Hazardous ..	345	3.27%	389	3.22%
Hazmat	41	1.02%	28	0.75%
Marine Fire	1	0.05%	1	0.01%
Medical	7,324	65.44%	8,453	66.04%
Other	147	1.35%	125	0.98%
Rescue	34	0.62%	30	0.41%
Rescue - W..	17	0.78%	4	0.14%
Vehicle Acci..	409	4.49%	502	5.21%
Others	116	1.05%	202	1.57%
Total	10,362	100.00%	11,875	100.00%

Graph 1 identifies the unique incidents by incident type responded to by at least one Santa Barbara unit during the identified period.

Graph 1. Unique Incidents
2021 by Percentage

Hazardous Condition: 3.7%
Vehicle Accident: 4.5%
Assist: 5.6%
Fire: 8.3%
Medical: 73.8%

- Medical
- Fire
- Assist
- Vehicle Accident
- Hazardous Condition
- Others
- Fire - Vegetation
- Other
- Fire - Vehicle
- Hazmat
- Rescue
- Fire Test Call
- Rescue - Water
- Fire - Other
- Marine Fire

Graph 2 below identifies the number of incidents by month in Santa Barbara during the identified period.

Graph 2. Unique Incidents *(Last 3 Years)*
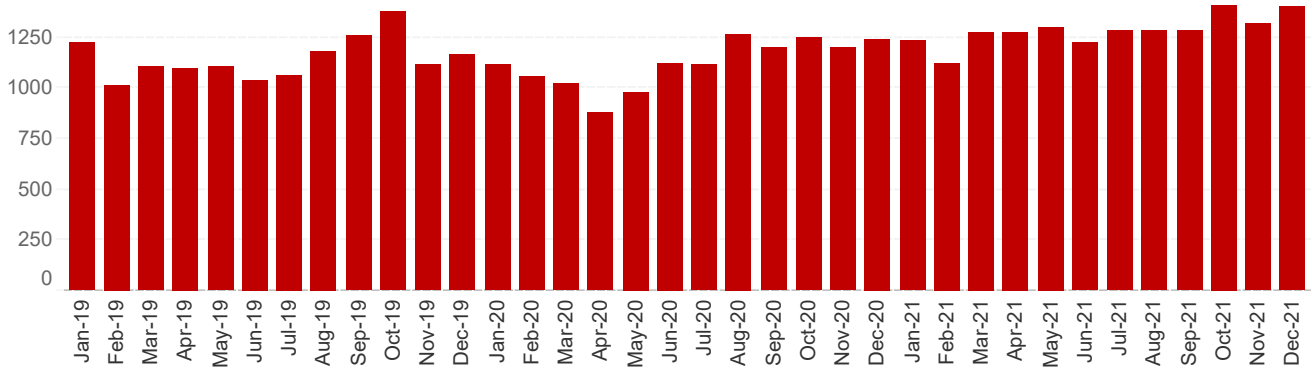*From 2019 to 2021*

Table 3 below identifies the number of unit movements by incident type to calls in Santa Barbara during the identified year and compared to the prior year.

Table 3. Unit Movements
2020 and 2021 Compared

	2020		2021	
	Count	Percentage	Count	Percentage
Others	149	1.05%	254	1.57%
Assist	783	5.52%	787	4.86%
Fire	1,980	13.97%	2,085	12.88%
Fire - Other			23	0.14%
Fire - Vegetation	189	1.33%	380	2.35%
Fire - Vehicle	71	0.50%	88	0.54%
Fire Test Call	85	0.60%	143	0.88%
Hazardous Condition	464	3.27%	521	3.22%
Hazmat	145	1.02%	122	0.75%
Marine Fire	7	0.05%	1	0.01%
Medical	9,276	65.44%	10,688	66.04%
Other	191	1.35%	158	0.98%
Rescue	88	0.62%	67	0.41%
Rescue - Water	110	0.78%	23	0.14%
Vehicle Accident	636	4.49%	843	5.21%
Total	14,174	100.00%	16,183	100.00%

Table 4 below identifies the number of unique incidents by station area responded to by at least one Santa Barbara unit during the identified period.

Table 4. Unique Incidents
2021 by Station Area

	2021
Station Area 1	3,162
Station Area 2	2,005
Station Area 3	1,163
Station Area 4	2,190
Station Area 5	1,665
Station Area 6	1,361
Station Area 7	232
Station Area 8	52
Other	45
Total	11,875

Graph 4 below identifies the number of unique incidents by station area and month responded to by at least one Santa Barbara unit in the last 3 years.

Graph 4. Unique Incidents
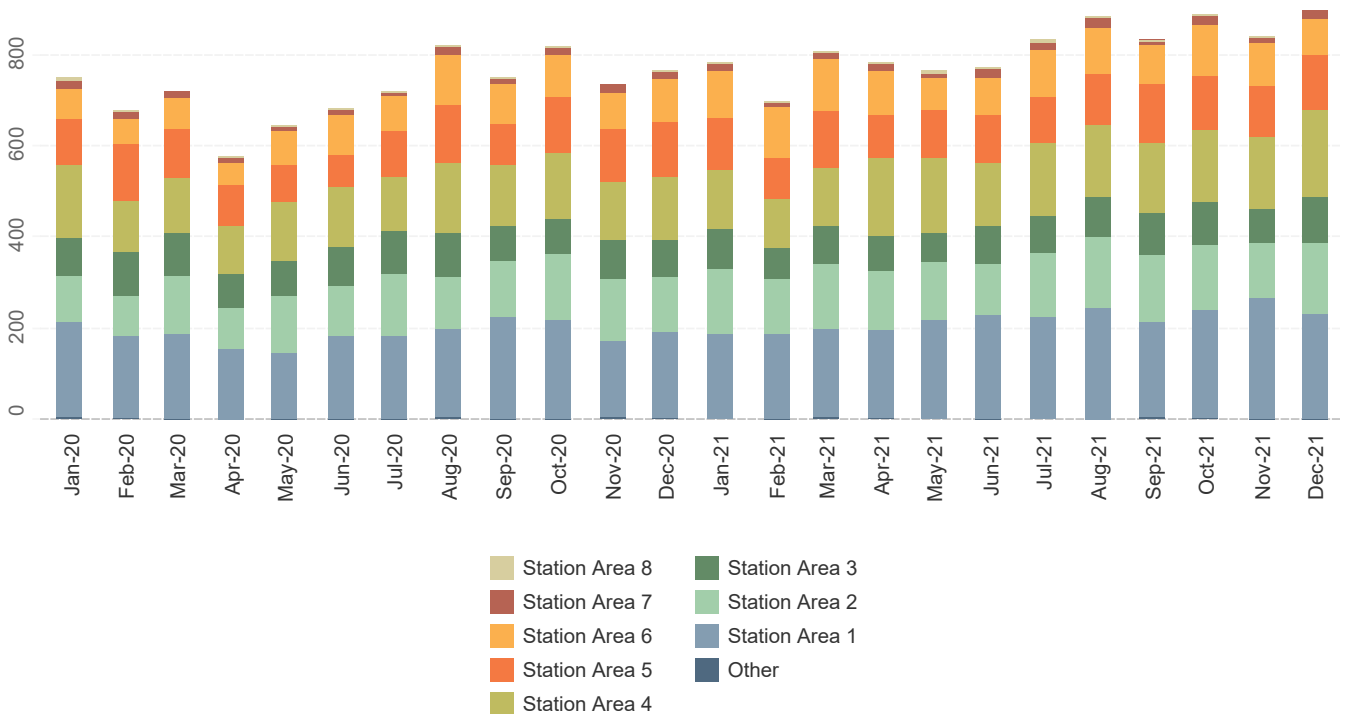_From 2019 to 2021 by Station Area_

Table 5 identifies the total number of unit movements by each Santa Barbara unit during the identified period. For purposes of this report, "unit movement" is defined as any commitment to an incident, regardless of whether or not the unit arrived at scene.

Table 5. Unit Movements
2021 by Unit ID

	2021
AIT	2
ARF77	52
ARF78	5
ARF79	29
BC12	2
BC71	135
BC72	140
BC73	26
BC74	29
BC76	88
BC95	2
BE374	12
BE377	9
BE673	3
BT1	1
BT2	8
BT3	2
CO11	1
CO12	3
CO13	31
CO14	3
CO15	63
CO17	4
D71	1
E171	601
E172	113
E173	118
E174	71
E175	544
E176	57
E177	29
E71	2,772
E72	2,051
E73	1,438
E74	2,166
E75	1,553
E76	1,374
E77	310
ES71	1
FP71	12
FP72	18
FP74	45
FP75	30
FP76	51
HM72	12
HP1	393
M191	10
M91	27
M92	85
OES386	3
PT77	1
SQ91	1
TK11	1
TK171	291
TK71	558
U7	1
U71	1
USR71	1
Grand Total	16,183

Table 6 and Graph 6 identify the total number of incidents by day of week responded to by Santa Barbara units during the identified period.

Table 6. Unique Incidents
2020 and 2021 by Day of Week

Year	Day of Week	
2020	Monday	1,472
	Tuesday	1,435
	Wednesday	1,524
	Thursday	1,510
	Friday	1,544
	Saturday	1,450
	Sunday	1,437
2021	Monday	1,715
	Tuesday	1,660
	Wednesday	1,626
	Thursday	1,732
	Friday	1,798
	Saturday	1,774
	Sunday	1,583

Graph 6. Unique Incidents
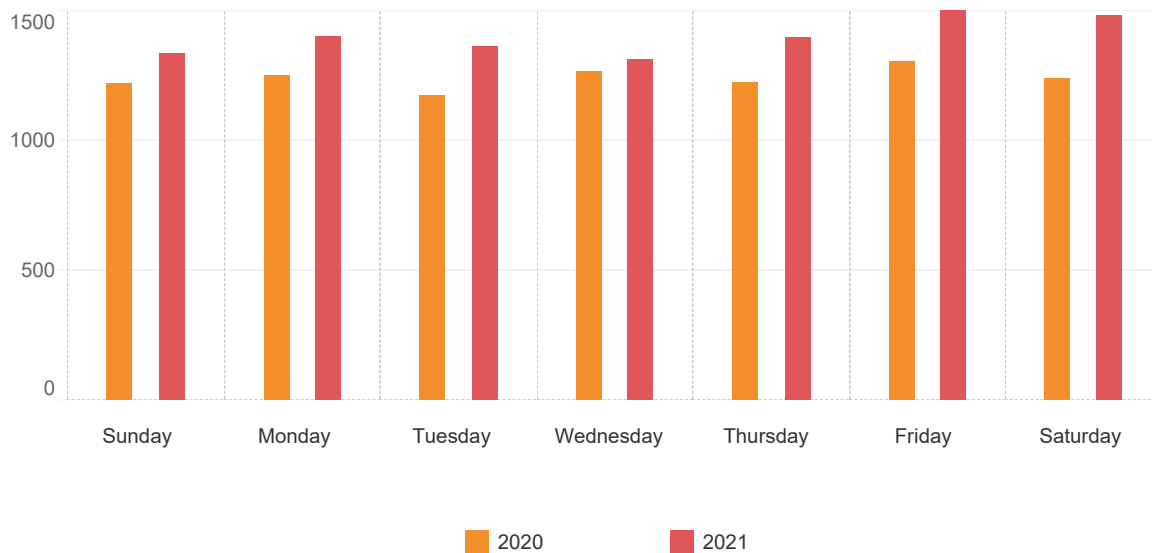*2020 and 2021 by Day of Week*

Table 7 and Graph 7 identify the total number of incidents by hour of day responded to by Santa Barbara units during the identified period.

Table 7. Unique Incidents
2021 by Hour of Day

hour	2021
12:00AM	320
1:00AM	244
2:00AM	234
3:00AM	194
4:00AM	194
5:00AM	239
6:00AM	290
7:00AM	434
8:00AM	540
9:00AM	613
10:00AM	707
11:00AM	693
12:00PM	737
1:00PM	677
2:00PM	731
3:00PM	735
4:00PM	707
5:00PM	733
6:00PM	679
7:00PM	633
8:00PM	528
9:00PM	478
10:00PM	402
11:00PM	349
Total	11,875

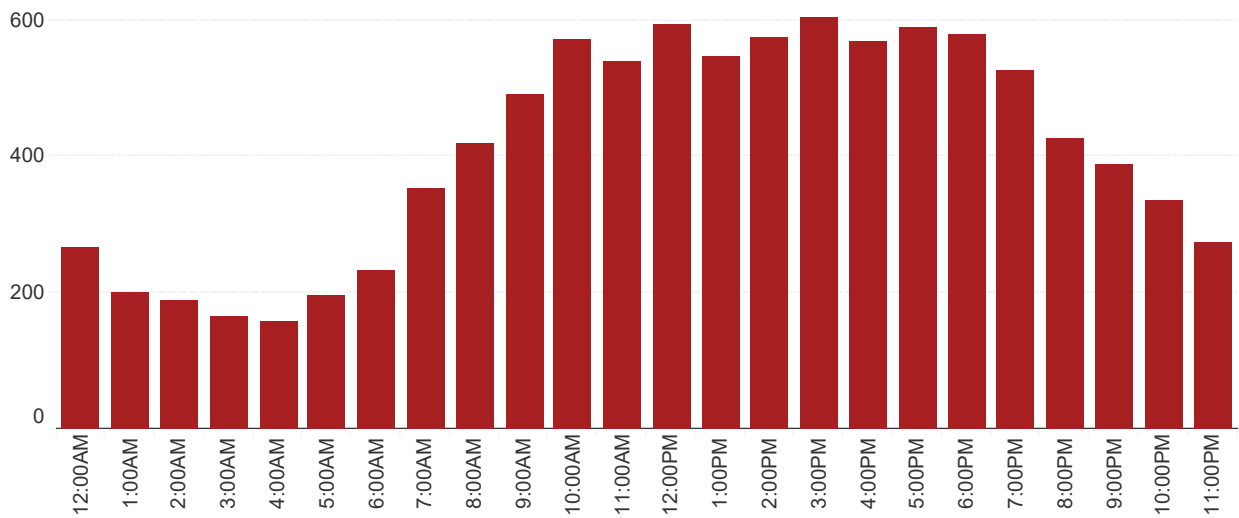**Graph 7. Unique Incidents**
2021 by Hour of Day

Table 8 identifies descriptive statistics associated with turnout, travel and response times for first units on scene in Santa Barbara on emergency incidents.

Turnout time is the time elapsed from dispatch until the unit gets underway. This is measured by subtracting the time of the unit's notification from the time the engine goes en route.

Travel time is the elapsed time from the time the unit gets underway, or is en route, to the time the unit arrives at scene. This is measured by subtracting the time the unit goes en route from the time the unit arrives at scene.

Response time is the time elapsed from dispatch until the unit arrives at scene. This is measured by subtracting the time the unit dispatched from the time the unit arrives at scene.

Committed time is the time elapsed from dispatch until the unit reports "clear" from an incident and is either ready for a new assignment or otherwise no longer committed to the incident.

Table 8. Descriptive Statistics for Call Processing, Turnout, Travel and Response Times in Santa Barbara, First Units, Emergencies.
2021

	Call Processing Times	Turnout Times	Travel Times	Response Times
Count	8545	8,169	6,775	6,950
Average	00:01:12	00:01:22	00:03:44	00:05:04
90th Percentile	00:02:03	00:02:10	00:05:55	00:07:22
Median	00:01:03	00:01:17	00:03:31	00:04:52
Max.	00:04:00	00:04:00	00:14:08	00:16:57
Min.	00:00:15	00:00:15	00:00:15	00:00:16
Range	00:03:45	00:03:45	00:13:53	00:16:41
Standard Deviation	00:00:38	00:00:36	00:01:48	00:01:54

Table 9. Dispatch Center Alarm Processing Time
FY 2016 - FY 2021

	Call Processing Times					
	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Count	7131	7325	7447	7119	6846	7809
Average	00:01:22	00:01:07	00:01:09	00:01:09	00:01:23	00:01:16
90th Percentile	00:02:35	00:02:05	00:02:02	00:02:01	00:02:45	00:02:20
Max.	00:05:00	00:05:00	00:05:00	00:04:59	00:04:59	00:04:59
Min.	00:00:05	00:00:05	00:00:05	00:00:06	00:00:05	00:00:06
Range	00:04:55	00:04:55	00:04:55	00:04:53	00:04:54	00:04:53
Standard Deviation	00:00:53	00:00:43	00:00:42	00:00:42	00:00:57	00:00:49

Table 10. Turnout Time
FY 2016 - FY 2021

	Turnout Times					
	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Count	6287	6192	6246	6069	6201	7126
Average	00:01:17	00:01:18	00:01:22	00:01:24	00:01:15	00:01:19
90th Percentile	00:02:16	00:02:15	00:02:23	00:02:24	00:02:06	00:02:08
Max	00:04:00	00:04:00	00:04:00	00:04:00	00:04:00	00:03:58
Min	00:00:05	00:00:05	00:00:05	00:00:05	00:00:05	00:00:06
Range	00:03:55	00:03:55	00:03:55	00:03:55	00:03:55	00:03:52
Standard Deviation	00:00:42	00:00:41	00:00:43	00:00:43	00:00:38	00:00:37

Table 11. Travel Time
FY 2016 - FY 2021

	Travel Times					
	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Count	5743	5510	5527	5586	5553	6212
Average	00:03:33	00:03:38	00:03:32	00:03:40	00:03:40	00:03:50
90th Percentile	00:05:38	00:05:43	00:05:31	00:05:41	00:05:46	00:05:57
Max	00:15:14	00:15:43	00:15:44	00:15:40	00:15:58	00:15:16
Min	00:01:00	00:01:00	00:01:00	00:01:00	00:01:00	00:01:00
Range	00:14:14	00:14:43	00:14:44	00:14:40	00:14:58	00:14:16
Standard Deviation	00:01:42	00:01:46	00:01:41	00:01:47	00:01:42	00:01:41

Table 12. Response Time on Code 3 Medical Calls
FY 2016 - FY 2021

	Response Times					
	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Count	3153	1674	1451	1450	2544	4211
Average	00:04:23	00:04:23	00:04:17	00:04:32	00:04:39	00:04:55
90th Percentile	00:06:31	00:06:35	00:06:26	00:06:36	00:06:52	00:07:03
Max	00:18:00	00:16:45	00:17:06	00:14:54	00:16:38	00:17:40
Min	00:01:00	00:01:01	00:01:00	00:01:01	00:01:00	00:01:01
Range	00:17:00	00:15:44	00:16:06	00:13:53	00:15:38	00:16:39
Standard Deviation	00:01:51	00:01:51	00:01:51	00:01:49	00:01:48	00:01:45