2018 Patrol Staffing Report

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In 2007, the Madison Police Department contracted with Etico Solutions, Inc., for the completion of a patrol staffing study. The Etico study was completed in mid-2008. Along with the final report, Etico provided the department with spreadsheets that captured the methodology used in the study, so that the department can replicate the process using updated data to analyze patrol workload and staffing needs. This process was repeated for a number of years (2009, 2010, 2011 and 2012); the results were used to estimate overall MPD patrol staffing needs and to allocate existing MPD patrol resources.

In 2012, MPD transitioned to a new records management system (LERMS). The following year the Dane County 911 Center transitioned to a new CAD (computer aided dispatch) system (Tri Tech). These transitions created some significant obstacles to performing this analysis, and the process was not completed for the years 2013 or 2014.   The annual analysis resumed in 2016 (examining 2015 data), and this report examines 2018 data.

Summary

A summary of the 2018 patrol staffing analysis:

- Reactive patrol workload increased to **161,479** hours in 2018. This reflects an increase of about **11%** over 2017.

- In 2018, the MPD patrol function spent an average of more than **40** minutes per hour on reactive (or obligated) patrol work. This does not include time spent on administrative tasks, which account for an average of about 8 minutes per hour. This reflects the highest level for this measure since MPD has been conducting this analysis.

- A new process allows MPD to better track times when patrol response is limited to emergency/priority calls. During the second half of 2018 (the time period when the new process was in effect), a member of the community calling for police assistance had an almost one in ten chance that MPD call response was limited.

- 2018 patrol workload and leave time data demonstrate that MPD patrol staffing should be **242** officers. Meeting this standard would require the addition of **thirty-one** (**31**) officer positions to patrol.

- While it is critical to add positions to the department's authorized strength to address this shortage, the scope of the deficiency is significant, and any new positions would not provide operational support until 2021. Recognizing this urgent need, the Chief has made the decision to eliminate twelve (12) non-patrol positions in 2020, re-allocating those officers to patrol. These changes will result in reductions to MPD's Community Policing Teams, Community Outreach and Resource Education (CORE) unit, and Gang Unit; and the elimination of two neighborhood officer positions. These reductions follow the elimination in 2017 of seven (7) non-patrol officer positions. That resulted in the elimination of the Safety Education unit and the afternoon shift of the Traffic Enforcement Safety Team (TEST). The cumulative impact of these cuts is a significant reduction in the level of service MPD is able to provide the community.

- The elimination of these twelve (12) non-patrol officer positions will partially address the patrol staffing shortage, but still leaves a need for the addition of **nineteen (19)** officers to the patrol function.

Methodology

As a review, the Etico methodology seeks to accurately estimate appropriate patrol staffing needs based on actual patrol workload and leave information. This provides a much more accurate reflection of patrol staffing needs than other methodologies, such as officer-to-population ratios, benchmarking, crime rates, etc. This methodology is consistent with the Police Personnel Allocation Manual, developed by the Northwestern University Center for Public Safety. It is also consistent with police staffing formulas recommended by the International Association of Chiefs of Police (IACP). In fact, the Etico methodology is more accurate (though also more labor-intensive) than the IACP process. The process does not directly address staffing for positions other than patrol officers. However, some positions – particularly that of patrol sergeant – are directly related to patrol staffing levels.

The first portion of the Etico analysis entails determining total patrol workload. Most of this data is obtained from the Dane County Public Safety Communications Center's Computer Aided Dispatch (CAD) system. This data is supplemented by dictated report, field report, Tracs crash report, and evidence processing data, so that an average total officer time required for each CAD incident type can be calculated. Then, once the total number of incidents is determined (also from CAD data), the total officer workload is calculated. Time spent on administrative functions is also factored in to this calculation.

The second portion of the process is an analysis of officer leave time. Officers assigned to patrol do not work 365 days a year (they have regular days off as well as leave time days, such as vacation), and not all work days are assigned to the patrol function (officers attend training, have special assignments, etc.). An analysis of leave time will determine the shift relief factor (SRF), a number approximating how many total officers in patrol are required to field one officer daily.

The final component to determining patrol staffing needs is finding the proper balance between reactive and proactive work (also referred to as obligated and unobligated time). Most of the officer workload data captured through the CAD reflects reactive work (generally, officers responding to calls for police service). However, the community expects a certain amount of proactive work from officers. This proactive work can focus on problem solving, community engagement and building relationships. If too little time is allocated to proactive work, an adverse impact on reactive work will also be observed (reduced visibility, increased response times, etc.).

Analysis of 2018 MPD Patrol Workload

The changes to MPD's RMS and Dane County's CAD have created some challenges to performing this analysis. For example, MPD's RMS and the Tri Tech CAD have completely different codes to categorize the calls that officers respond to. Converting these fields from the CAD incident types to MPD incident types requires additional processing, and creates some limitations when comparing current data to historical data.

Analysis of MPD's 2018 patrol workload began with a data output from the CAD. The file contains more than **20 million** data fields. This database was then filtered to remove records not related to MPD patrol workload. The 2018 analysis included **only** CAD records assigned to MPD patrol officers (as well as officers assigned to the Downtown Safety Initiative, or DSI).

The 2018 analysis (like that of prior years) did not include any incidents handled through the self-reporting process. The self-reporting system was established to reduce patrol workload, by having citizens self-report certain types of minor incidents. Many of these incidents reflect events that MPD – and, certainly, the community – would like to have a patrol officer respond to. However, due to patrol workload officers are not able to respond to these incidents, and the self-reporting process was created to provide some level of MPD service. In 2018 more than **4,000** incidents were handled through the self-report process. If these incidents had been handled by patrol officers they would have accounted for about **6,000** additional officer work hours.

In addition to CAD patrol workload data, a few additional sources are relevant. Time needed for report completion has a significant impact on patrol workload, and is often not captured in CAD workload. A combination of actual report data (from the system server), and survey results are used to determine average report times (for field reports, dictated reports and Tracs crash reports). The original Etico methodology added report times (based on field report and dictated report data) to the per-incident reactive workload. This did not account for the fact that some reports are completed while an officer is still assigned to the incident on the CAD. Survey data is utilized to obtain estimates of how often officers complete reports (both field and dictated) while still assigned to the incident on the CAD. This is accounted for in the calculations to avoid double counting any officer time in the reactive workload. The 2018 analysis also incorporated officer time spent on processing collected evidence into the MPD property system. Previous years'

analysis had estimated this workload as an administrative task; the 2018 process is a more accurate reflection of officer time dedicated to evidence processing.

Also, officers spend time each day on a variety of administrative tasks. These include squad fueling, equipment maintenance, etc. These activities are generally not tracked on the CAD. During the initial Etico report, a sample of patrol officers completed daily logs to estimate daily administrative time. This survey process has been repeated since then, and a multi-year weighted average is used in the calculations. Because administrative time is not captured on the CAD and is estimated using surveys, and due to how the Etico formulas are set up, administrative time is not reflected in the average reactive time per hour calculation. It is reflected in the overall needed patrol staffing calculation, but administrative time actually reflects additional required workload beyond reactive time. The department is in the process of exploring ways to utilize the CAD to capture administrative time.

The final portion of the workload analysis is distinguishing between reactive and proactive work. This is done primarily by incident type. Some call types (like foot patrol and traffic stops) are designed to capture proactive work and are excluded from reactive workload. Other call types are likely to capture both reactive and proactive work. These include traffic incidents, traffic arrests, check person and check property incidents. An estimated split between reactive and proactive incidents for these call types was determined (based on CAD data) and a portion was excluded from reactive workload:

Incident Type	Reactive/Proactive split
Traffic Arrest	50/50
Traffic incident	25/75
Check Person	90/10
Check Property	90/10

Note that the CAD workload analysis certainly understates the actual workload demands on the MPD patrol function. Two factors demonstrate this:

- Patrol officers engage in some work – both reactive and proactive – that they do not call out to dispatch (and is therefore not captured on the CAD). Most commonly, this occurs because officers want to be in service, and available for incoming calls. It can also be a result of radio traffic volume, and an inability to get on the air to contact dispatch.

- More significantly, some patrol work is unquestionably handled by non-patrol personnel on a regular basis. This includes operational personnel (CPT, neighborhood, etc.) but can include any unit types (command, detectives, etc.). However, CAD data provides no way to differentiate between patrol-related and non-patrol related activity engaged in by these units. Limiting the workload analysis to patrol officer workload only is an extremely conservative approach to assessing MPD patrol staffing needs.

Results of Workload Analysis

The data showed **125,416** patrol incidents in 2018 (meaning 125,416 CAD incidents that had a patrol officer or Downtown Safety Initiative officer assigned), and **161,479** hours of reactive patrol workload. The number of patrol incidents includes both proactive and reactive incidents, while the reactive workload total excludes proactive work.

It is important to recognize that this data is based on incidents as tracked in the CAD, and not on Incident Based Reporting (IBR) crime data. When a Public Safety Communications Center employee takes an initial call from a citizen requesting police assistance, a CAD incident – with an incident type – is created. Often, investigation will show that a crime other than that initial incident type was committed, or that no crime was committed at all. Sometimes the CAD is not changed to reflect this. So, the incident totals analyzed in this report will not match MPD's IBR data in all instances.

While patrol CAD incidents declined from 2017 to 2018, patrol workload (hours of work) increased. This continues a trend from 2015, and is consistent with what many agencies are seeing nationally. Much of this reduction in patrol incidents can be attributed to a change in 911 Center policy about dispatching 911 disconnects. Officers responded to about 5,500 fewer 911 disconnect incidents in 2018 than in 2016. That accounts for 80% of the reduction in patrol incidents from 2016 to 2018.

So, patrol officers are – in general – spending more time on fewer incidents. This can be a result of increasing case complexity, process changes, or decisions made by outside stakeholders that MPD cannot control. Examples include:

- *OMVWI cases* – Several years ago a U.S. Supreme Court ruling expanded the instances when officers are required to obtain a search warrant before seeking a blood draw from an OMVWI suspect. This has impacted officer workload. In 2015, MPD patrol officers spent an average of about 4.5 hours to process an OMVWI arrest. In 2018, that number increased to about 8.8 hours.

- *TRACS crash reports* – TRACS is the state system for completing electronic traffic crash reports and citations. The system and process has proven to be cumbersome and time-consuming. Recently, the State updated the software in such a way that results in an even more time-consuming process.

- *Emergency Detentions* – the emergency detention process involves a number of external stakeholders and processes, all outside the scope of what MPD can control. The most well-publicized example is the State's decision to require that persons taken into custody pursuant to an emergency detention be taken to the Winnebago Mental Health facility (rather than to Mendota, located in Madison). The City filed suit – unsuccessfully – to require the State to accept emergency detention patients at Mendota. Emergency detentions take an average of more than twenty (20) officer hours to process.

Instances where MPD limits officer response to emergency/priority calls also impacts the overall number of patrol incidents. Regularly, the MPD Officer in Charge (OIC) will notify the 911 Center

that MPD patrol officers are only able to respond to emergency or priority calls. This is typically a result of significant call volume or a single major incident. During these time periods, routine calls for police officers are not serviced, impacting the overall number of MPD patrol incidents.

Mid-year 2018, MPD instituted a new procedure to better track times when call response is limited. During the second half of the year, there were **166** instances where MPD's patrol response was limited to emergency and priority calls (some of these instances did not impact citywide response but were limited to a particular district or area of the City). These 166 instances occurred on **120** dates (some days required limited call response multiple times), and accounted for **426** total hours of limited call response. This means that on **65%** of days MPD's patrol response was limited to emergency and priority calls for part of the day. As a function of total hours, MPD's response was limited **9.7%** of the time during the second half of the year. So, a member of the community calling for police assistance had an almost one in ten chance that MPD call response was limited.

As indicated above, CAD data certainly understates the actual amount of MPD patrol workload. It is very common for other operational MPD units (CPT, neighborhood officers, patrol sergeants, etc.) to assist with patrol work, and this workload is excluded from this analysis. However, if only 10% of the CAD workload of these unit types was considered to be patrol-related and included in this analysis, that would increase reactive workload by more than **2,300** hours.

Shift Relief Factor

The second component of the Etico methodology is to determine the shift relief factor (SRF). Officers do not work every day of the year, and on some days they work, they work in a non-patrol capacity (training, special assignments, etc.). Once calculated, the shift relief factor approximates the number of total officers required to staff one shift position every day of the year.

There are several components to the shift relief factor: regular days off; leave time; non-patrol time; and net-compensatory time. Leave time includes regular work days that an employee does not work (vacation, sick time, etc.). Non-patrol time includes work days where the employee works in a non-patrol capacity (training, special assignment, etc.). Net compensatory time is the net gain or loss in patrol work due to the amount of overtime worked (in patrol) and compensatory time off taken (by patrol staff).

The shift relief factor calculation also factors in the impact of the staffing contingency plan on patrol staffing. The staffing contingency plan has been utilized for a number of years, and requires sergeants and officers assigned to non-patrol positions to work multiple patrol shifts a year. The objective is twofold: to reduce overtime costs by filling patrol staffing shortages with non-patrol personnel, and to ensure the readiness of all MPD personnel to perform the patrol function if needed. For simplicity, staffing contingency was figured into the net comp time calculation. Only those staffing contingency shifts assigned to account for staffing shortages is included in the calculation.

Leave time in 2018 was analyzed for the pool of patrol personnel who were in patrol positions for the entire year. This was a pool of 151 officers. Leave time was then calculated as an average number of days per year per officer:

Leave/Benefit/Non-patrol Time:

Category	Days
Administrative Leave	.85
Bereavement Leave	.36
Family Leave	4.26
Holiday Leave	1.58
Sick Leave	3.63
Jury Duty	
MPPOA Earned Time Off	.67

Category	Days
Vacation Leave	15.86
Workers Comp Time Off	.23
Light Duty	6.04
Special Event	.29
Special Assignment	3.88
Training	6.33
Military Leave	1.99

Net Compensatory Time:

Comp Time Used	Days
Comp Time Off	15.79

Overtime Worked	Days
Patrol Overtime	9.69

[Net compensatory time also includes staffing contingency days worked and shift change RDO adjustments; compensatory time off as part of Family Leave is also included]

These figures compare with prior years as follows:

Time Off Category	2008	2009	2010	2011	2012	2014	2015	2016	2017	2018
Regularly Scheduled Days Off	121.67	121.67	121.67	121.67	121.67	121.67	121.67	122	121.67	121.67
Admin & Benefit Time	29.91	29.77	27.5	26.94	26.91	28.319	27.346	32.78	30.65	27.74
Non-Patrol Time	19.07	21.97	22.88	24.5	20.47	25.30	21.40	24.04	21.13	16.54
Net Comp Time Off	9.47	6.40	9.92	7.42	8.24	6.73	7.76	4.43	4.4	6.09
Totals	180.12	179.81	181.54	180.25	177.29	182.02	178.17	183.25	177.85	172.04

Most leave time is non-discretionary, being either contractual (vacation, compensatory time, etc.) or legally required (military leave, family leave, etc.). Some categories of non-patrol time are also non-discretionary (light duty, required training, etc.). The City's paid parental leave policy will likely have an impact on staffing needs moving forward; during the first half of 2019 MPD personnel used about **3,900** hours (**485** days) of paid parental leave.

The average time away from patrol per officer in 2018 was the lowest it has been since the department has been conducting this analysis. It reflects the staffing difficulties faced by patrol during the year, and the resulting steps taken to address them. For example, a department-wide moratorium on specialized training – other than that deemed to be essential – was in place for most of the year. An improvement in extracting and analyzing leave time data (possible due to new City software capabilities) was also implemented for the 2018 process, and this also had an impact on the result.

Utilizing the Etico shift relief formula, this data results in a shift relief factor of **1.89**. This means, generally, that MPD needs to have 1.89 officers assigned to patrol for each position to be staffed

every day of the year. This figure has remained fairly consistent since 2008, though the 2018 result is the lowest since the analysis has been performed. The 2018 shift relief factor reflects a reduction from 2017, when the SRF was 1.95.

Note that the shift relief factor is an average reflecting actual non-patrol and leave time, which is not necessarily the *desired* level of non-patrol and leave time. For example, while reducing training time in 2018 clearly had an impact on the shift relief factor (and on the overall result of the patrol workload analysis) it does not reflect an ideal policy or best practice. The Etico process does not include any mechanism to work any subjective variable into the shift relief factor calculation. So, any consideration of desired non-patrol/leave time must be factored into the desired proactive/reactive time breakdown.

Workload Balance

The final component of the Etico methodology is to determine the proper balance between patrol officers' reactive work time and proactive work time. The analysis of patrol workload is used to determine officers' reactive time. Once the balance between reactive and proactive time is determined, total patrol staffing needs can be calculated. The Etico report articulated the reasons for balancing reactive and proactive time:

> Including an appropriate amount of proactive time provides benefits for the agency, the officer, and the citizens of the jurisdiction. In fact, a lack of sufficient proactive time can negatively impact the ability of an agency to provide optimal police services to the community.

> Among the arguments for including proactive time is the need to avoid having officers running from call to call. Agencies that operate in such an environment report several drawbacks. The most obvious is the inevitable officer burn-out that can occur. Less obvious is the loss of information that may help to solve a crime. It is conventional wisdom for police investigations that the solvability of a case begins to deteriorate from the moment the incident occurs. If the initial responding officer is rushed to move on to the next call, there is a greater chance that important follow-up opportunities and information will not be collected, diminishing the solvability of the case.

> Another drawback is the loss of time for on-the-job training…when corrective action is needed by (a) supervisor, proactive time must be available. If officers are clearing calls and going directly to the next call throughout the shift, the supervisor will not have the training opportunities needed to help officers avoid future mistakes.

A lower level of reactive time per hour improves police service, professionalism, and responsiveness to the community. Ensuring adequate proactive time also has a direct effect on a number of patrol performance measures (such as visibility and response time), impacting the quality of police service delivered to the community. A fundamental component of providing police patrol services is that officers are available when calls are received. This is reflected in the goal of having a balance between obligated and unobligated time.

The original Etico report recommended that MPD strive have officers spend 28 to 30 minutes of each hour on reactive activity. Since then, the Mayor, Common Council members, and MPD have

generally recognized a 30/30 split (minutes per hour) between proactive and reactive time as being an appropriate goal for MPD patrol staffing. We believe this staffing is required to provide the level of service that the community expects. In 2018, the MPD patrol function spent an average of 40.54 minutes per hour on reactive (or obligated) work. This reflects the highest annual average since this analysis has been performed (and does not reflect time spent on administrative tasks).

While the difference between 30 and 32 minutes (as an example) of reactive time per hour seems minor, it is important to recognize that these figures are all based averages, across all hours of the day and all days of the year. Having a lower reactive time per hour improves the ability of officers to engage in community policing. Officers have more time to engage in proactive activity and be responsive to community issues and concerns. In fact, if MPD patrol was staffed to allow that 30 minutes per hour be spent on reactive work (compared to 32 minutes per hour), more than twenty-five (25) officer hours each day would be freed to engage in proactive activity. Visibility, efficiency and response time would also improve. A lower reactive time per hour also improves officer availability, resulting in better response times. The difference between 30 and 40 minutes per hour of reactive work reflects more than 125 officer hours per day. This results in less time for proactive patrol, problem solving and community engagement. It also leads to delayed response times, and more frequent instances where MPD only responds to emergency/priority calls.

In 2019, 211 MPD positions are designated to patrol (as officers; this figure excludes sergeants). However, actual patrol staffing at any given time will vary and will typically be far less than this (primarily as a result of attrition). In 2018 the actual number of officers assigned to patrol averaged 179 over the course of the year; this number will likely be even lower for 2019.

Utilizing the Etico methodology, 2018 patrol workload and leave time data demonstrate that MPD patrol staffing should be **242 officers**. This is based on an even split of proactive and reactive time. Meeting this standard would require the addition of **thirty-one (31)** officer positions to patrol. However, MPD is eliminating twelve (12) non-patrol positions in 2020 and reallocating them to the patrol function, so **nineteen (19)** additional police officer positions are needed in patrol. These increases also require the addition of at least **three** sergeant positions to patrol (based on span of control).

Additional Staffing Metrics

In 2016, MPD and City Finance jointly prepared a report on police staffing (as required by Common Council resolution). The report looked at several measures (other than the Etico workload process) to provide context for police staffing. These metrics included:

- FBI personnel-to-population ratios
- Comparison with peer jurisdictions
- Comparison with other Wisconsin agencies

All of these metrics have significant limitations. **These data points are intended to provide context when evaluating MPD staffing, not to suggest a particular result or staffing level.** The 2016 report was based on MPD having 1.9 sworn officers per 1,000 residents. This figure was based on MPD's authorized staffing in 2016 and Madison's 2015 estimated population per the U.S. Census (the 2016 estimate was not available at the time the report was completed). MPD's current staffing ratio remains **1.9** sworn officers per 1,000 residents (based on current authorized strength of 479 and Madison's 2017 estimated population of 255,214).

FBI – The FBI's annual crime reporting data includes information on full-time law enforcement employees. The data is broken down by region, with employee-to-population ratios provided for several categories of municipality size. The Group I category of agencies includes those serving populations of more than 250,000; the Group II category of agencies includes those serving populations between 100,000 and 249,999. Group I is broken down into further population subsets, and regional data is available for all groups.

The 2016 report included data points for both Group I and Group II, as Madison's 2015 population estimate was just under 250,000. Madison's 2017 population estimate (the most current available) was 255,214, so only Group I data will be included moving forward.

As indicated, FBI law enforcement employee data is also broken down by region and sub-region. Wisconsin is in the East/North/Central portion of the Midwest region.

So, the most applicable comparison points from FBI staffing data are the Midwest region (East/North/Central subsection) from Group I, and the national Group I 250,000 – 499,999 population subset (the Group I population subsets are not broken down by geographic region). However, other data points will be included for comparison. Two notes about FBI police employee data:

- Staffing levels reflect actual personnel at the time the agency reports to the FBI, not authorized strength. Many agencies are not able to fill vacancies with qualified personnel, so the FBI employee data will not reflect those agencies' authorized strength.

- The FBI data will typically be calculated before the US Census population estimates have been released. The FBI does a population estimate for the purposes of reporting police employee data, but the population figures used will typically vary slightly from the US Census estimates.

Updated 2017 FBI police employee data (commissioned staff):

Category	Officer to Population Ratio	Adjustment to MPD Sworn Staffing to Meet Average*
Group I (East North Central section of Midwest Region)	3.3	Add 350-373 officers
Group I (Midwest Region)	3.0	Add 274-297 officers
Group I (National)	2.6	Add 172-195 officers
Group I (250,000 – 499,999 national subset)	2.0	Add 19-42 officers

*Note that FBI officer to population data is provided rounded to the nearest tenth. For example, anything between 1.95 and 2.04 will be reported as 2.0. This rounding can reflect a significant variation in actual staffing numbers. Figures in this column reflect this range.

Note that in 2003, an MPD staffing study was performed, with the involvement of Alders, MPD command staff and representatives from the Madison Professional Police Officers Association (MPPOA). That report recommended that MPD reach a staffing level of 1.9 officers per 1,000 residents by 2008, and maintain a staffing level of 2.0 officers per 1,000 residents in 2010 and beyond.

Peer Jurisdictions – the 2016 report identified five peer cities for comparison: St. Paul, MN; Greensboro, NC; Baton Rouge, LA; Boise, ID; and Des Moines, IA. In 2016, these agencies had an average of 2.2 sworn officers per 1,000 residents.

Wisconsin agencies – the five largest cities in Wisconsin (excluding Madison) are Milwaukee, Green Bay, Kenosha, Racine and Appleton. In 2016, these jurisdictions had an average of 2.7 sworn officers per 1,000 residents.

Updated 2017 figures for peer jurisdictions and other Wisconsin agencies (from FBI data):

	Population	Sworn Officers	Ratio
Milwaukee	595,168	1,824	3.1
Appleton	74,660	107	1.4
Green Bay	105,331	185	1.8
Racine	77,371	191	2.5
Kenosha	99,671	199	2.0
Average	**190,440**	**501**	**2.6**
Adjustment to MPD Sworn Staffing to Meet Average			**Add 172-195 officers**
St. Paul	306,696	645	2.1
Greensboro	290,051	656	2.3
Baton Rouge	227,403	641	2.8
Boise	225,677	290	1.3
Des Moines	217,277	350	1.6
Average	**253,421**	**516**	**2.0**
Adjustment to MPD Sworn Staffing to Meet Average			**Add 19-42 officers**

Patrol Incidents by Incident Type by Year

	2014	2015	2016	2017	2018
911 Abandoned Call	2957	3599	3534	2747	1315
911 Disconnect	7114	11012	8773	6529	6431
Accident Hit and Run	1475	1563	1645	1650	1691
Accident Private Property	377	704	778	804	833
Accident Property Damage	5882	5558	5596	5105	5176
Accident Unknown Injury	565	557	554	469	439
Accident w/Injuries	864	960	916	710	803
Accident-Mv/Deer	31	58	44	61	60
Adult Arrested Person	331	521	487	447	515
Aggravated Battery	6	8	2	2	0
Alarm	3170	3402	3379	3281	3221
Animal Complaint-Bite	31	14	16	10	6
Animal Complaint-Disturbance	656	718	659	724	564
Animal Complaint-Stray	289	320	433	358	287
Annoying/Obscene Phone Call	108	123	95	56	74
Arrested Juvenile	50	31	42	30	40
Arson	11	5	9	5	10
Assist Citizen	4856	4566	5057	5002	4916
Assist Fire/Police	4339	3165	3320	3105	3092
Assist Follow Up	2452	3752	3982	4299	4634
Assist K9	17	12	18	16	11
Assist/Community Policing	13	0	3	3	0
Assist-Court	57	146	138	186	214
Assist-Translate	12	12	6	9	5
Attempt to Locate Person	861	1254	1257	1264	1193
Attempted Homicide	1	0	2	4	3
Attempted Suicide	454	77	34	20	24
Battery	613	610	559	574	544
Bicycle Accident	6	10	7	9	5
Bomb Threat	32	7	4	4	9
Burglary-Residential	1251	1210	912	747	843
Check Parking Postings	1	2	1	1	4
Check Person	7873	10547	11239	11926	11785
Check Property	4525	5726	7292	7022	7282
Child Abuse	162	184	134	189	185
Child Neglect	97	79	57	34	41
Civil Dispute	660	863	770	944	938
Conveyance Alcohol (Detox)	123	150	104	54	60
Conveyance Mental Health				31	36
Damage to Property	1033	1046	968	1125	978
Death Investigation	142	130	200	227	250
Disturbance	6434	5826	5949	5603	5627
Domestic Disturbance	3171	3358	3096	2903	2869
Drug Investigation	1163	1266	1280	1304	1114

Emergency	4	0	1	0	0
EMS Assist	2375	3587	3747	3670	3741
Enticement/Kidnapping	39	20	16	21	12
Escort Conveyance	350	720	650	656	675
Exposure	83	47	40	38	21
Extortion	0	8	8	13	17
Fight Call	258	541	444	410	334
Fire Investigation	5	4	0	1	1
Foot Patrol	504	773	1097	970	833
Forgery	425	6	5	1	3
Found Person	129	124	118	136	96
Found Property	1266	1367	1411	1493	1533
Fraud	490	983	910	923	1013
Graffiti Complaint	103	121	125	137	95
Homicide	1	4	10	7	1
Information	4124	2645	3502	3524	3797
Injured Person	23	38	23	12	19
Intoxicated Person	343	556	395	372	329
Juvenile Complaint	341	510	523	738	555
Landlord Tenant Trouble	103	157	123	137	105
Liquor Law Violation	152	217	157	91	99
Liquor Law/Bar Check	89	73	66	64	47
Lost Property	34	54	90	82	91
Misc Sex Offense	58	103	103	119	159
Misdialed 911 Call	2123	2383	1726	1569	1170
Missing Adult	468	309	267	243	285
Missing Juvenile	460	681	664	610	532
Multiple/Nuisance 911 Calls	12	10	17	20	10
Neighbor Trouble	313	429	460	407	413
Noise Complaint	2701	3331	3228	3133	2511
Non-Residential Burglary	218	257	212	231	228
Non-Urgent Notifications	49	15	32	13	20
Odor/Smoke Complaint	6	3	3	3	1
OMVWI Arrest/Intoxicated Driver	155	165	236	291	296
On Duty Training	48	145	179	190	134
On St Parking Complaint	391	454	510	343	331
Overdose	46	83	154	155	150
Person Down	9	14	30	12	18
Phone	6566	5369	4812	4647	4519
Playing w/Telephone 911 Call	506	602	454	450	311
PNB/AED Response	168	179	184	138	108
Preserve the Peace	1384	1229	1269	1400	1302
Problem Solving-Person	12	5	5	5	9
Problem-Solving - Property	11	15	12	32	122
Prostitution/Soliciting	15	29	31	44	14
Prowler	15	20	26	15	7

Pvt Prop Parking Complaint	464	462	388	436	292
Question 911 Call	44	23	23	18	24
Rec/Stolen/Outside Agency	79	78	155	201	343
Repo	3	4	5	1	5
Retail Theft	1244	1683	1649	1676	1266
Robbery - Armed	118	101	105	118	151
Robbery-Strong Armed	125	130	108	101	106
Safety Hazard	4224	4396	5029	4749	4841
Serving Legal Papers	308	462	406	313	299
Sexual Assault	182	199	183	206	198
Sexual Assault of a Child	134	155	162	173	155
Significant Exposure (Officer)	3	1	2	1	4
Silent Case Number	50	75	45	77	67
Solicitors Complaint	23	123	94	36	59
Special Event	59	114	142	174	216
Stalking Complaint	126	110	103	114	119
Stolen Auto	528	533	664	703	785
Stolen Bicycle	20	33	19	15	19
Suspicious Person	2727	1892	1606	1687	1708
Suspicious Vehicle	1924	2131	2117	2145	2069
Test 911 Call	12	11	11	10	3
Theft	2486	2048	1797	1876	1790
Theft from Auto	320	398	476	515	467
Threats Complaint	1846	1791	1654	1582	1612
Towed Vehicle/Abandonment	38	20	25	21	32
Traffic Arrest	17	15	17	5	9
Traffic Complaint/Investigation	391	697	761	689	786
Traffic Incident	507	283	304	366	356
Traffic Stop	7177	6043	3640	3218	4064
Trespass	2031	775	802	871	1101
Unintentional 911 Call	4685	6159	5296	4720	4984
Unknown	299	38	32	7	9
Unwanted Person	1232	2421	2109	2071	2286
Violation of Court Order	280	511	464	552	478
Weapons Offense	343	522	433	468	457
Weapons Offense Person w/Gun	234	102	109	117	61
Worthless Checks	6	12	7	2	1
Alarm (Broadcast & File)	2	0	0	0	0
911 Call Silent	2485	0	0	0	0
Explosives Investigation	9	0	0	0	0
Escapee/Info	2	0	0	0	0
Conveyance	299	0	0	0	0
Traffic Incident/Road Rage	86	5	0	0	0
Total	**128412**	**136092**	**132368**	**127193**	**125416**

Detailed Leave Time Information – 2018 Patrol

Leave/Benefit/Non-Patrol Time:

Category	Days	Category	Days
Admin Leave - No Pay	0.178808	Sick Leave	3.628808
Admin Leave - With Pay	0.67598	Vacation: 1st Pick	6.589404
Bereavement Leave	0.357616	Vacation: 2nd Pick	3.197848
Exigent Leave MPPOA	0.030644	Vacation: 3rd Pick	0.913907
Exigent Leave Vacation	0.122575	Vacation: SP#1	0.188742
Family Leave: AWOP	0.202326	Vacation: SP#2	0.02649
Family Leave: Sick Used	1.182917	Vacation: Standard	4.940229
Family Leave: Vacation	0.995202	Workers Comp Time Off	0.231788
Family Leave: MPPOA	0.000828	Light Duty: (LD-WC)	1.536424
Holiday: Request Off	0.874172	Light Duty:(LD-ND)	4.480546
Holiday: Order Off	0.701987	Light Duty: Admin	0.019868
Injured	0.034934	Event	0.293253
Jury Duty	0.003311	Spec. Assignment	3.830229
MPPOA Earned Time Off	0.666865	Spec. Assignment Partial	0.053725
Military Leave	0.02649	Training	6.264901
Military Paid	1.317053	Training Partial	0.065397
Military Leave AWOP	0.642384		

Net Compensatory Time:

Comp Time Used	Days	Overtime Worked	Days
COA+30 Days	3.009603	General	4.0862316
Comp Time: Off	8.201803	Call in Voluntary	0.4342991
Comp Time: SP#1	0.009934	Call in Order	
CU/W-VU	1.661769	Holdover Voluntary	0.412018
Exigent Leave Comp	0.485722	Holdover Order	0.1636592
Shift Change RDO	0.543046	Extraordinary	1.3041202
Comp Time: SP#2		Misc OT	0.0534764
Family Leave: Comp	1.874385	Shift Change RDO Worked	0.4304636

Non-patrol Personnel Patrol Work:

| Overtime Worked	Days
Call in Voluntary	0.2446039
Call in Order	0.0020235
Holdover Voluntary	0.155764
Holdover Order	0.0756929
Staffing Contingency	2.3311258

Workload Overview

The following charts are based on CAD data only, and generally include all patrol CAD workload (reactive and proactive), including Downtown Safety Initiative (DSI).
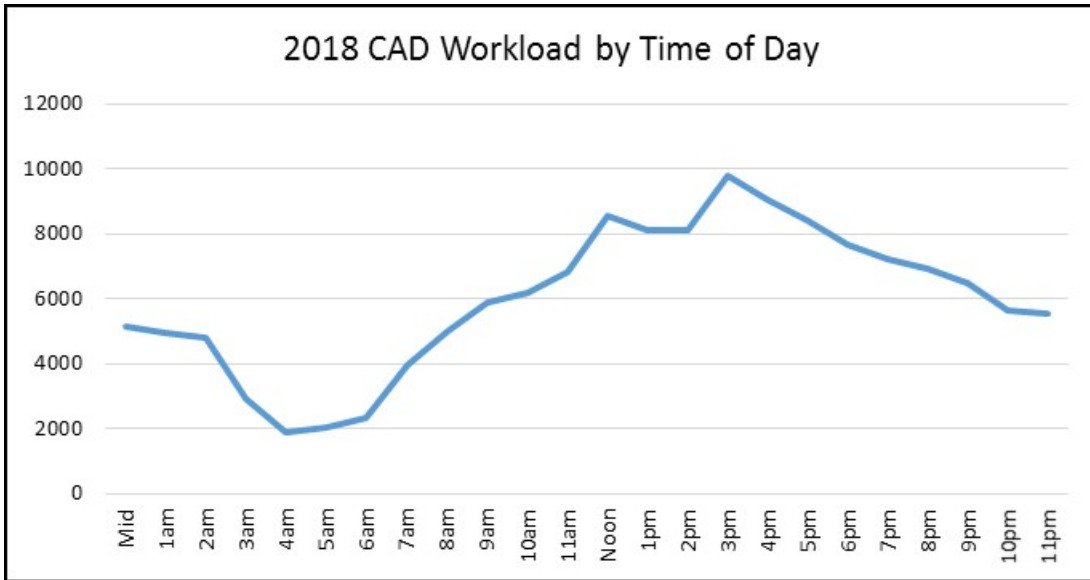

This daily workload curve (workload by hour of the day throughout the year) has remained very consistent. The daily workload curve was also fairly consistent across all districts (with the Central District as the exception):
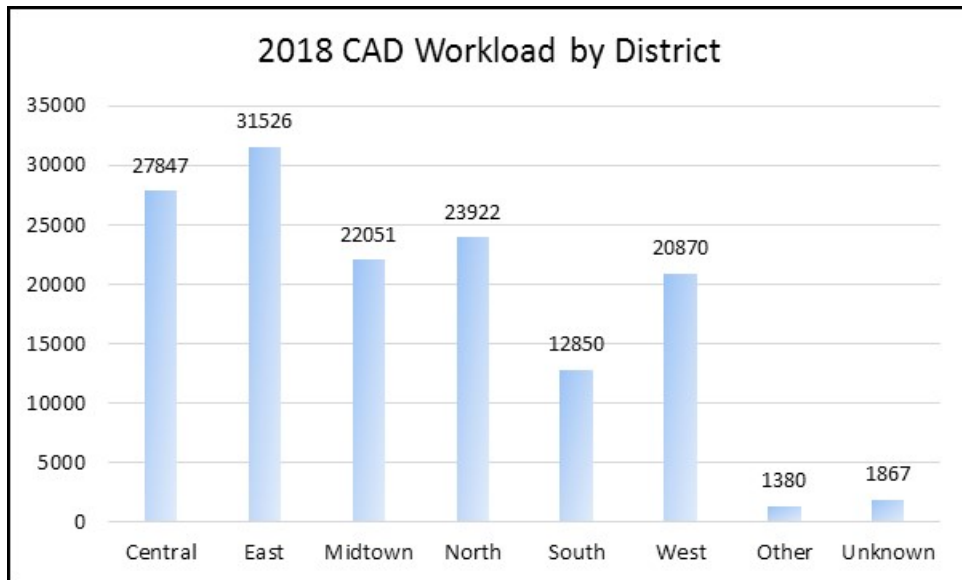
2018 CAD Workload by Incident Priority
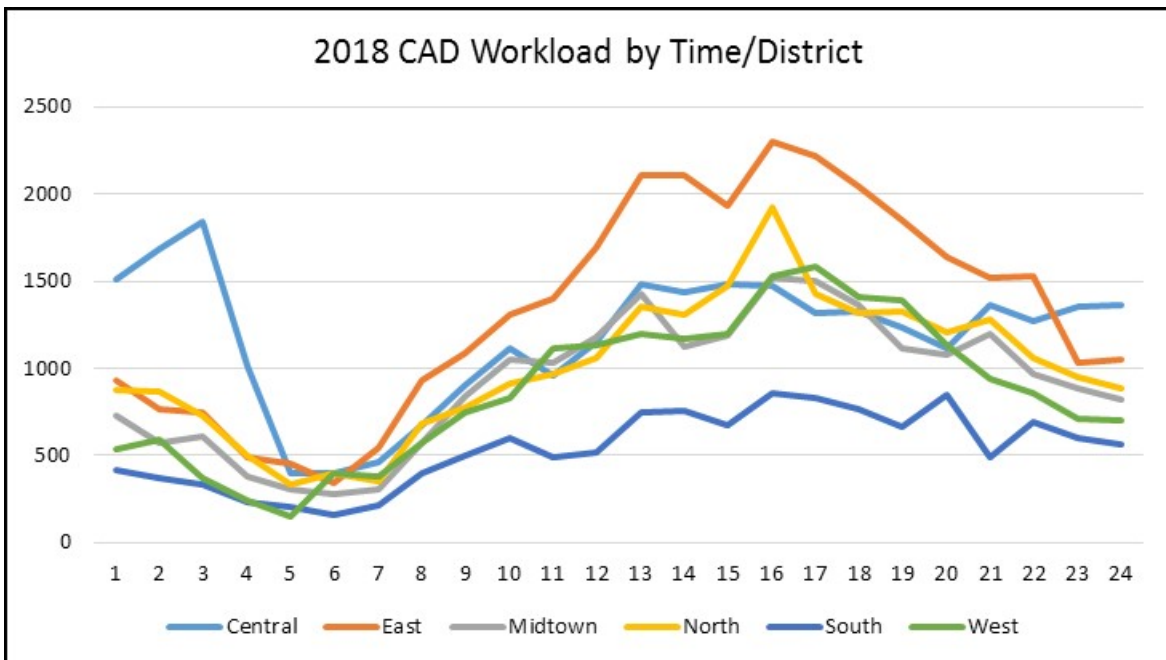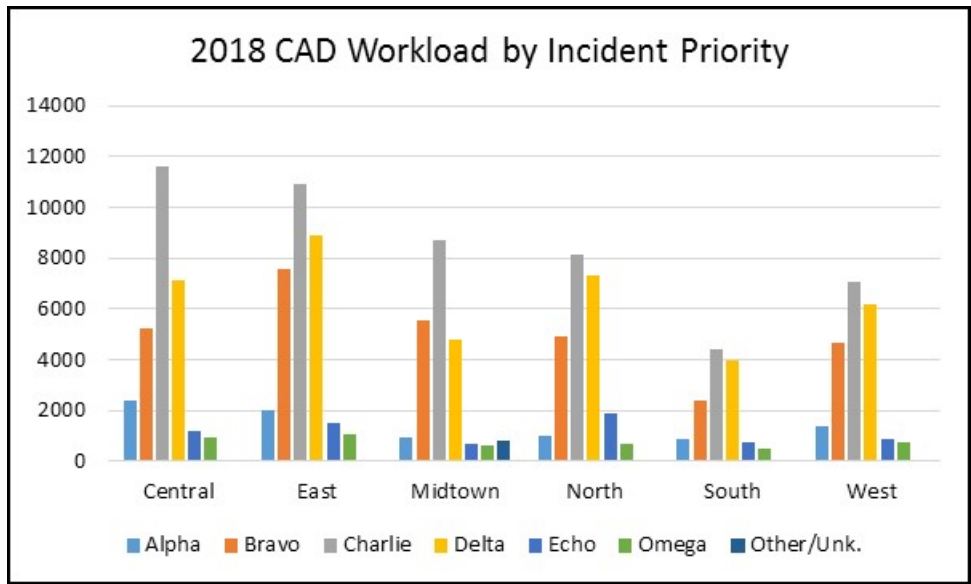
Incidents are categorized by priority in the CAD. "Echo" incidents are the highest priority; "Delta" incidents are also high-priority.
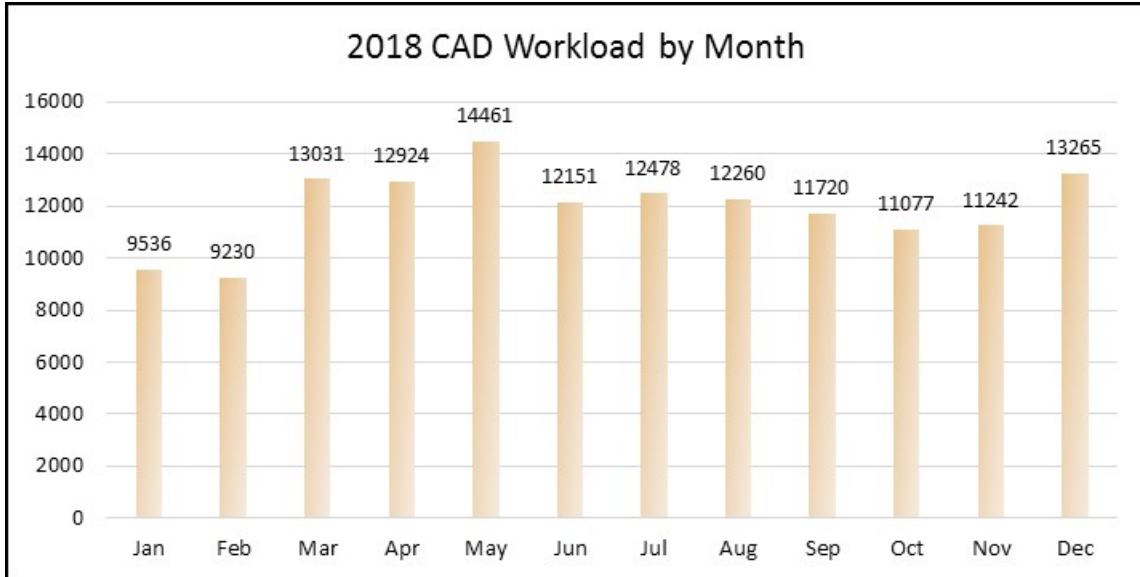

2018 CAD Workload by Incident Priority
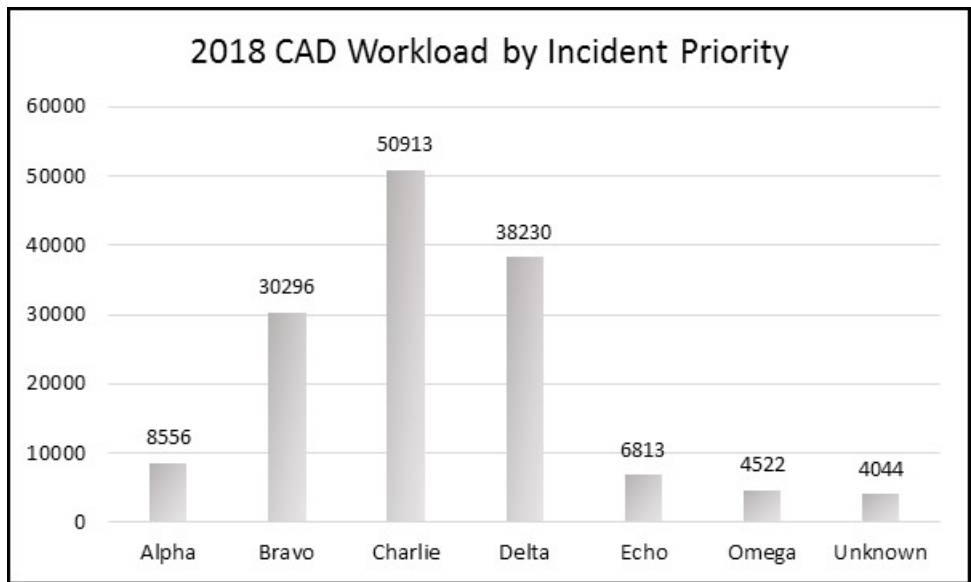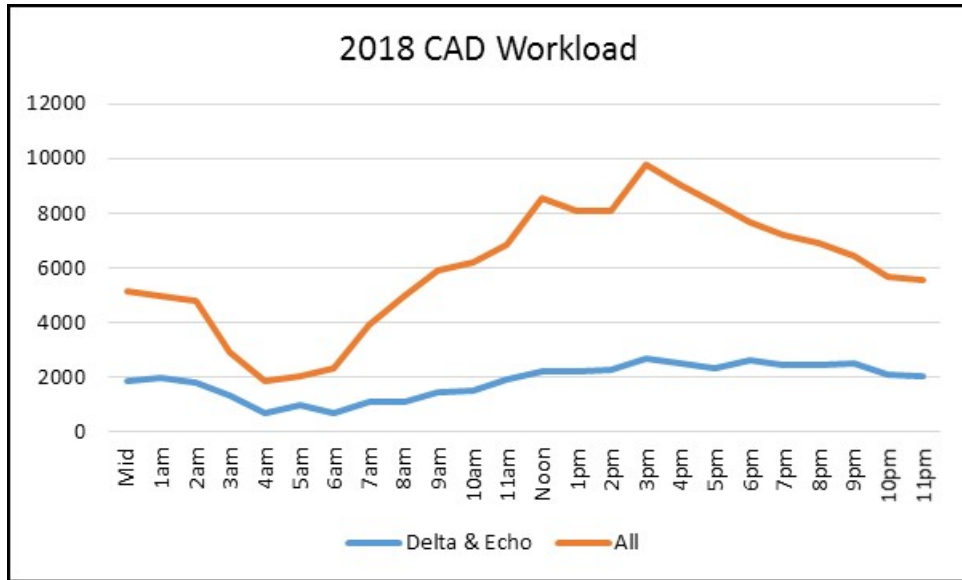
2018 CAD Workload

2018 hours of CAD patrol work by district:

2018 CAD Workload by District

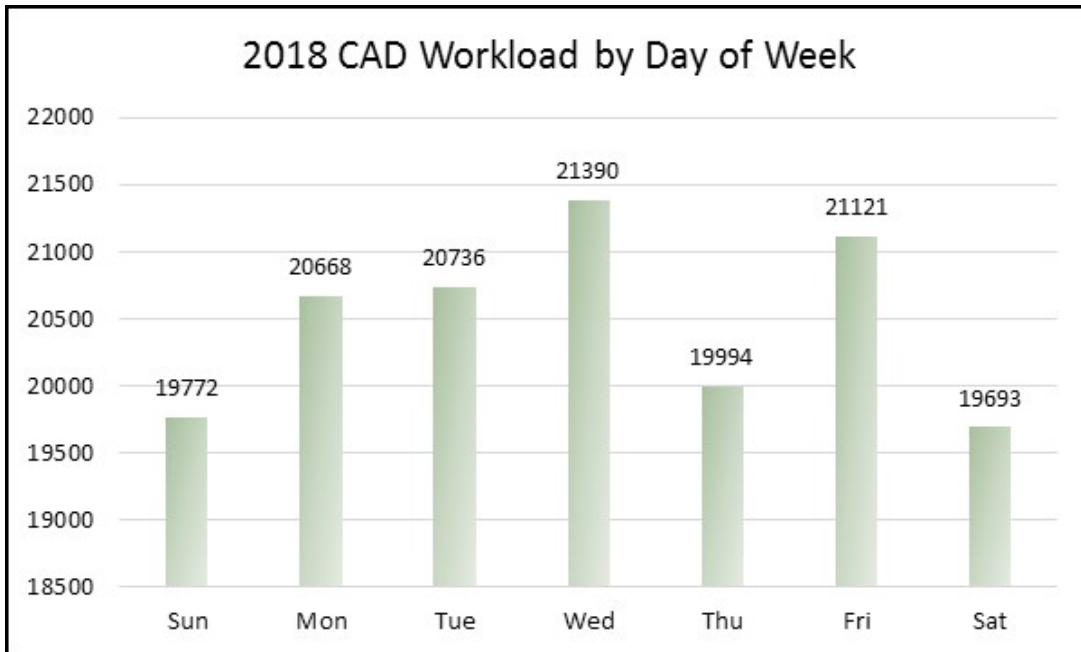
*Excludes on duty court and training

CAD workload by month:

2018 CAD Workload by Month

CAD workload by day of week:

2018 CAD Workload by Day of Week

A historical overview of patrol incidents and workload:

Annual Reactive Patrol Workload

Year	Value
2014	131108
2015	136161
2016	138869
2017	145673
2018	161514

Average Reactive Work per Hour

Year	Value
2014	31.68
2015	32.14
2016	35.3
2017	36.51
2018	40.54
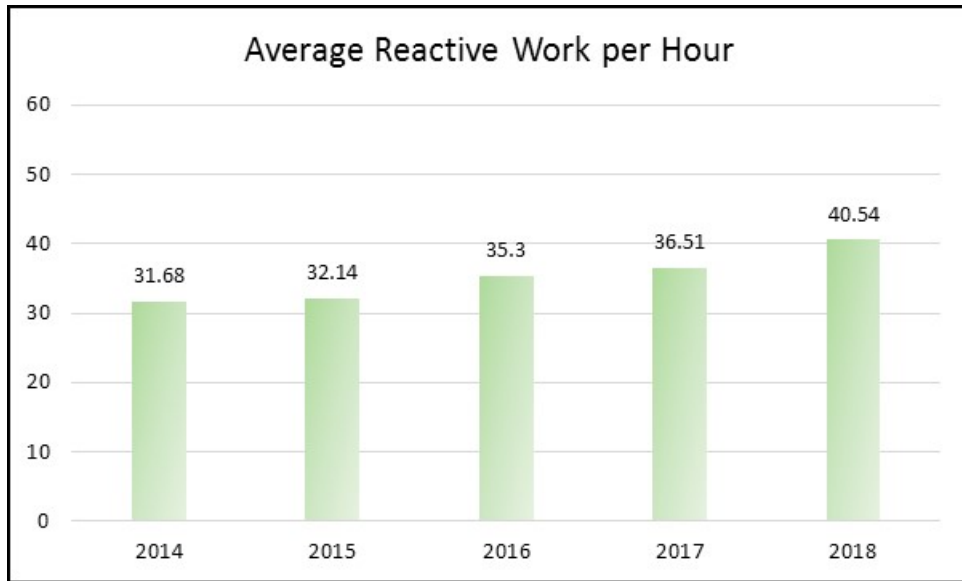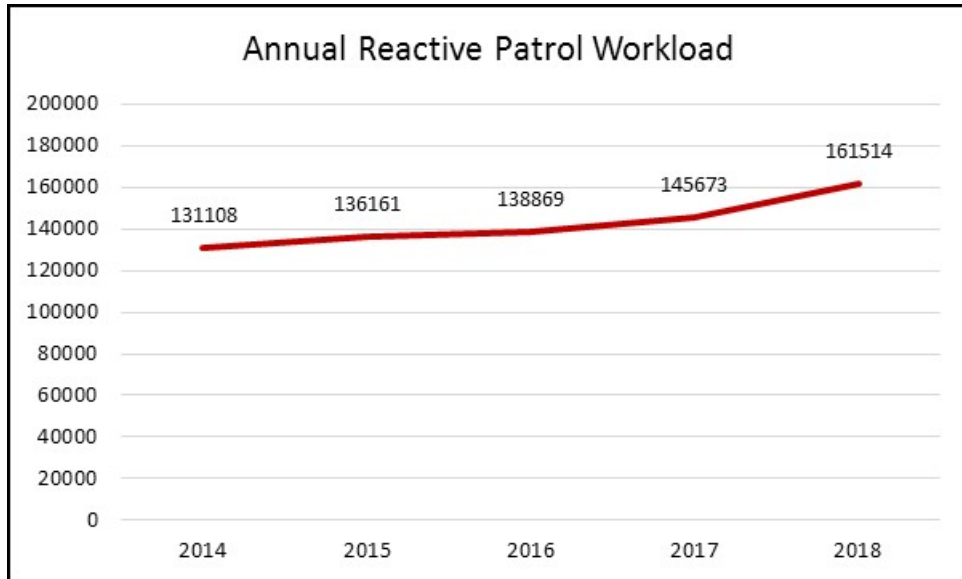
*These figures do **not** include hourly time spent on administrative tasks

Staffing Allocation Efficiency

With improved data collection and analysis, the department will seek to deploy patrol resources in a more efficient manner. Patrol staffing levels throughout the day can be matched to average patrol workload by time of day.
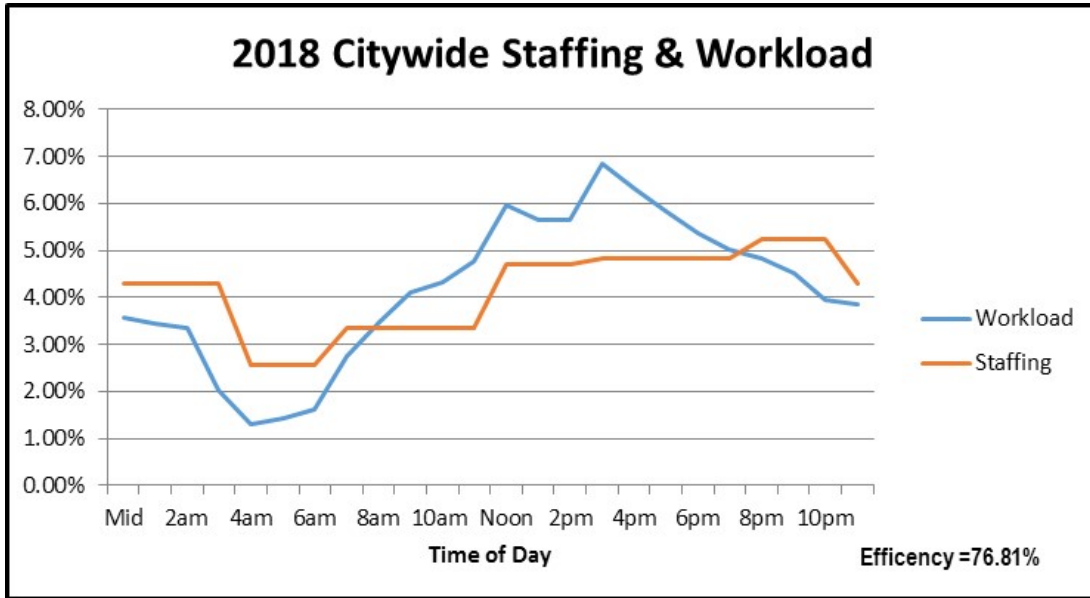
MPD instituted a five-shift patrol staffing model in early 2010, to increase efficiency. Efficiency under the five-shift model has remained slightly better than would have been the case under the traditional three shift model:

Year	Efficiency	Efficiency w/traditional staffing model
2009	76.11	76.11
2010	79.09	73.24
2011	77.88	73.35
2012	75.64	71.52
2015	74.23	70.68
2016	75.47	71.92
2017	74.44	71.27
2018	76.81	73.54