



City of Madison
Police Staffing Report

Table of Contents

Introduction	1
Madison Police Department Overview	1
Prior Staffing Studies.....	9
Mechanisms for Determining Appropriate Police Staffing Levels	10
Community Expectations	12
Analysis	15
Population Ratios	15
Overview of Workload Data.....	17
Workload Drivers by Unit.....	22
Comparable Cities Methodology	27
Closing.....	40
Appendices.....	43

Introduction

In the 2016 operating budget, an amendment directed the City Finance Department, Police Department, and Racial Equity and Social Justice Initiative (RESJI) to conduct a study of staffing levels, district boundaries, and demand for police services in the City of Madison and compared to comparable peer cities. Within this study an overview of Madison Police Department (MPD) provides context for decision makers to understand how staffing resources are currently allocated across the five MPD districts. Peer cities, while an important directive of this study, are discussed with the understanding that geographic and sociopolitical context influence operations making each city's police department inherently unique.

The staff committee conducting this study includes two members of the MPD Command Staff and three Finance Department staff members, one of whom is a member of the Racial Equity and Social Justice Initiative. Additional support was provided by a statistician in Engineering and a research intern in Public Health Madison Dane County. The project charter for this study directed staff to construct a report of findings with no recommendations.

Madison Police Department Overview

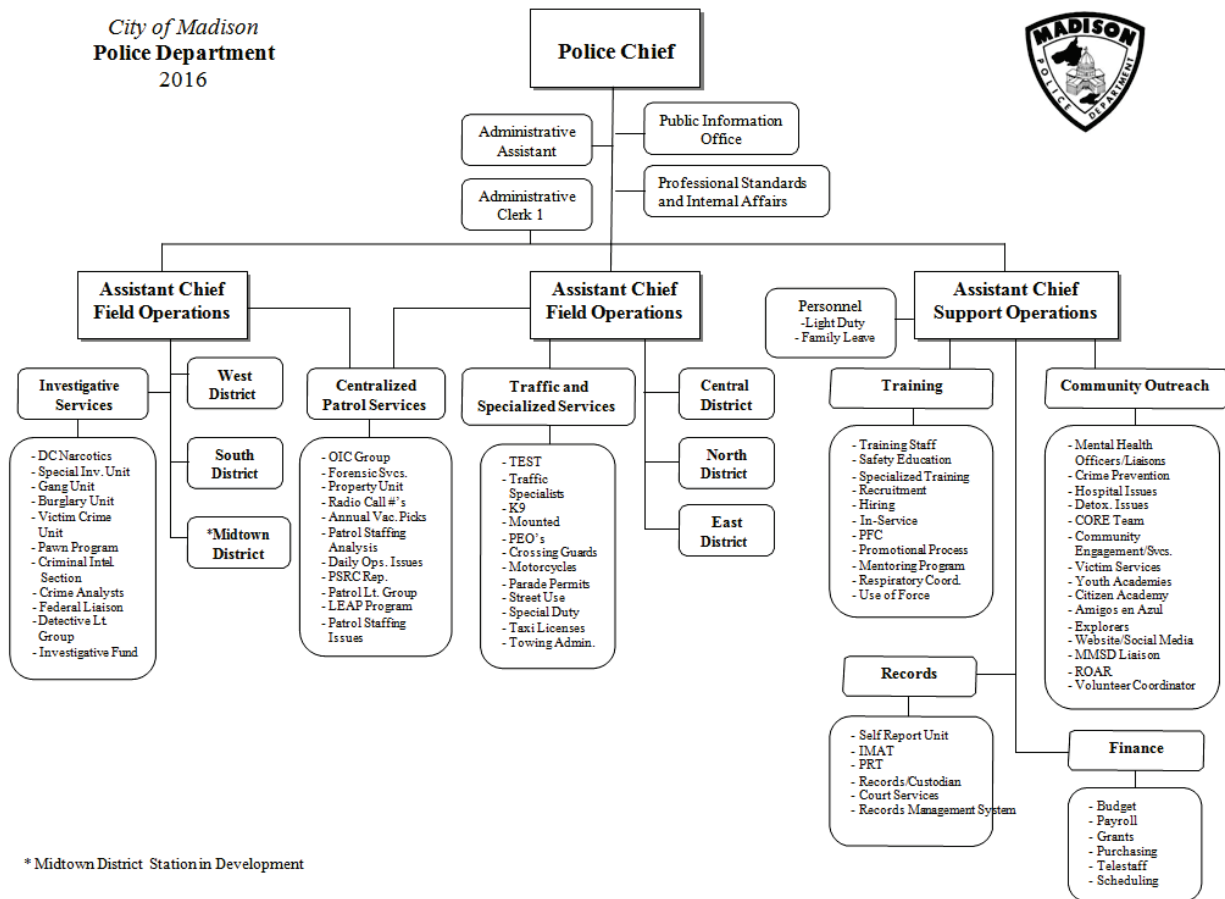
The Madison Police Department (MPD) is a professional, progressive organization made up of 576 employees, 461 sworn and 115 civilian (2016 authorized positions). MPD's reputation as a national leader in progressive policing originates from its emphasis on problem solving and community engagement.

The Chief of Police is responsible for the overall direction and operation of the Department. Below the Chief, ranks of the MPD follow (see Appendix D for additional detail on counts of officers per rank):

- Assistant Chief
- Captain
- Lieutenant
- Sergeant/Detective Sergeant
- Detective/Investigator
- Police Officer

Most MPD operations are run out of the five district stations. A sixth district station—Midtown—is in development. In addition, a number of specialized units work out of MPD's headquarters in the City County Building, or out of several other remote facilities (like the MPD Training Center).

Figure 1.



In 1987 the Department started a move to decentralization by opening an experimental police district on West Badger Road. This station eventually became the South District. The agency and the community found decentralization to positively impact MPD's ability to deliver police services, and decentralization continued:

- 1996: North District built
- 2000: West District built
- 2002: South District built (moved from rented building)
- 2006: East District built

*A map of the current districts is provided in Appendix A

Decentralization allowed MPD to be more responsive to, and more engaged with, the community. Problem solving capacity and visibility were also enhanced as officers developed familiarity and relationships within a subset of the city. As decentralization spread across a growing city, MPD's authorized strength also increased to continue to meet the needs of the community. (See table A.)

Table A.

Year	Authorized Strength (sworn)	Population	Ratio per 1,000
1994	326	204,687	1.6
1995	336	206,371	1.6
1996	342	208,157	1.6
1997	350	210,181	1.7
1998	358	210,201	1.7
1999	366	210,674	1.7
2000	374	208,054	1.8
2001	375	213,017	1.8
2002	382	216,478	1.8
2003	382	218,777	1.7
2004	387	221,513	1.7
2005	390	223,440	1.7
2006	398	225,765	1.8
2007	408	228,776	1.8
2008	438	231,840	1.9
2009	438	235,419	1.9
2010	438	233,209	1.9
2011	446	237,216	1.9
2012	449	240,441	1.9
2013	449	243,212	1.9
2014	449	245,691	1.8
2015	457	248,951	1.8
2016	461	248,951	1.9

(Population Estimates-Historical Data, 2015)

Note: 2015 population figure is used for the 2016 calculation because 2016 ACS estimates are not available

The number of sworn full-time equivalent (FTEs) employees grew 41.4% from 1994 to 2016; the number of civilian FTEs grew 88.5%; and the Department as a whole grew 48.8%.

The growth in full time equivalent (FTE) employees of selected other city agencies is provided in Appendix C.

MPD has been both proactive and successful in obtaining grant funding to support staffing increases, receiving \$8.3 million since 1994. The department's commissioned strength has grown by 135 positions since 1994, with 73 of these positions (54%) supported by grant funding.

Initial funding for 69 of these positions has come through the U.S. Department of Justice Office of Community Oriented Policing Services (COPS), which offers grants to local governments to grow community policing efforts. Prior to the 2011 grant, COPS funding was capped at \$75,000 for salary and benefits per officer over the three year grant period. In 2011, MPD received a grant that fully funded salary and benefits for three years for three positions. The City is currently receiving COPS grant funding from the 2014 and 2015 grants. These grants are capped at \$125,000 per officer over the grant period.

The City is required to retain the authorized strength of their sworn staff for at least one year after the end of the grant unless they can demonstrate a financial hardship. An important component of the grants is that they cannot supplant funding for officers that are planned to be funded by the

According to the 2016 Police Job Family Availability data, which is used by the Department of Civil Rights to monitor the Equitable Workforce Plan, MPD is one of the most diverse agencies across all city services. With six job classifications across the department, MPD is meeting the benchmark in 7 of the 12 job family categories for either women or people of color.

municipality. In other words, if the municipality will fund the new positions regardless of receiving the grant, the municipality is ineligible for the grant. At the end of the grant period, the City has full responsibility for the salary and benefit costs for each position that was added by the grant, which unless other funding sources are made available, will be funded by the tax levy.

The other four positions that are partially grant funded, are funded through the State of Wisconsin Department of Justice Beat Patrol grant. The Beat Patrol grant was initially a \$200,000 grant for four new beat patrol positions of which the City paid \$50,000 or 25%. Currently the State funding is \$126,714 annually. The entry level salary and benefits of an officer is approximately \$70,500; therefore, four entry level positions cost \$282,000, of which the State funds approximately 45%. The City pays the remaining \$131,777. The City has received the Beat Patrol grant, which is funded annually, for over ten years and has been awarded the grant again for 2017.

With or without grant funding for new positions, the Police Department offers an annual Pre-service Academy beginning in the fall of each year. This Academy includes recruits hired to fill all commissioned positions vacant at that time, as well as an estimated over hire for anticipated vacancies based on an average three year attrition rate. Currently the three year average for attrition for 2016 is seventeen and the 2016 class has twenty-three recruits.

This over hire is critical to maintaining adequate MPD staffing levels, due to the hiring calendar and required pre-service training. When a vacancy is created, a replacement can only be hired at the start of the pre-service academy in the fall. Those new hires then need about nine months of academy and field training before they are ready for solo patrol (and able to actually perform work for the department). The time delay from the creation of a vacancy to the time that a replacement is ready for field work can range from nine month to twenty-two months, depending on when the vacancy occurs. Absent the over hire—MPD would always be understaffed in relation to authorized strength.

Each recruit class is trained by MPD staff and sworn into the Police Department upon successful completion of the twenty-two week academy. Upon successful completion of the academy, recruits are commissioned as a patrol officer.

Allocation of the 576 positions within the MPD spans across more than thirty work units/functions which operate within the decentralized organizational structure (See Appendix E for a listing of all work units/functions).

While all functional units are important to the overall operations of the MPD, the timeline of this project precludes an exhaustive examination of every MPD unit/function. This report focuses on the work of nine work units/functions, representing about 78% of MPD's sworn workforce. The nine areas selected reflect the segments of MPD most visible to the public, most focused on delivering primary police services, and demonstrate MPD's commitment to proactive community policing and problem solving.

The nine work units/functions include:

- Patrol (Officers, Sergeants, and Officers in Charge)
- District Detectives
- Community Policing Teams
- Educational Resource Officers
- Gang Unit

- Mental Health Officers
- Neighborhood Officers
- Specialty Detective Units
- Traffic Enforcement and Safety Team (T.E.S.T.)

Reference Appendix D. for a table of FTE for all MPD functions/units.

Patrol: Representing 49% (228 FTE) of the sworn MPD workforce, this function accounts for the most common resident interaction with MPD. The patrol function is comprised of patrol officers and sergeants, who provide coverage to the City 24/7. Patrol officers respond to calls for service and also engage in proactive activity (foot patrol, traffic enforcement, problem solving, etc.). Patrol staffing currently utilizes a five-shift model (with primary shifts of 7a-3p; 12p-8p, 3p-11p, 8p-4a and 11p-7a). Each shift has a minimum staffing level that is maintained every day, even if overtime is required (minimum patrol staffing levels vary by time of day).

The patrol function is decentralized; patrol personnel work out of one of MPD's five districts (North, East, Central, South, and West). Each district has a command structure that includes one Captain who oversees the district and a Lieutenant whose responsibilities include oversight of the patrol function. Three lieutenants serve as full-time shift commanders (officers in charge). These lieutenants are assigned to provide 24 hour coverage, and work out of MPD Headquarters. Patrol sergeants also work out of the districts and fill in for the shift commanders as needed.

Personnel assigned to non-patrol functions will occasionally (up to four times per year) fill patrol beats through the department's "staffing contingency" plan. A beat is a geographical area patrolled by an officer in a specific time of day. Patrol staffing allocation and beat formation are discussed pages 19-20.

Filling patrol beats through the staffing contingency plan serves two functions: to allow non-patrol personnel to maintain operational skill levels across multiple functions, and to boost patrol staffing levels for scheduling flexibility (providing time off, scheduling training or special assignments, etc.).

District Detectives: Representing about 10% (45 FTE) of the sworn MPD workforce, these detectives primarily perform investigative follow-up on criminal cases. District detectives assist the specialty detective units when needed, and may be utilized for additional uniformed assignments during major events, such as Freakfest.

District detectives generally work a Monday through Friday shift, with varying shift times (day hours, noon – 8p, or 2p – 10p). There is also a weekend coverage rotation, so that two detectives are assigned to work each weekend day. District detectives are frequently called in from off duty to assist with major investigations.

Only a very small portion of incidents that MPD officers respond to are ultimately assigned to an MPD detective for follow-up. From January 1, 2014 through July 1, 2016, MPD handled 522,458 calls for service (an MPD "incident"). Of these incidents, 119,212 (22.8%) resulted in officers completing a report (an MPD "case"). Only 5,838 were assigned to a district detective for follow-up. That means only 4.9% of MPD cases and 1.1% of MPD incidents result in district detective follow-up. Whether a particular case is assigned to a district detective depends on a variety of factors, including: severity of the case/incident, solvability, special victim circumstances, detective workload/availability, victim cooperation, etc.

Community Policing Teams: Representing 7% (31 FTE) of the sworn MPD workforce, these teams work out of the five district stations. The East, North, South and Central teams are made up of five officers and one sergeant. The West team is made up of seven officers and one sergeant. The overall function of these teams is very dynamic in nature as they serve to support and enhance district police services delivered to the community. The primary emphasis for these teams continues to be proactive traffic enforcement, collaborative problem solving, community policing initiatives and response to significant or emerging issues in the districts. Community policing teams also serve a citywide function, staffing major events or initiatives as well as to respond to spontaneous events.

Shift and day off rotations for community policing teams vary by district. They generally work evening hours, and are expected to have some flexibility to meet the needs of the district.

Specialty Detective Units: Representing about 4% (17 FTE) of the sworn MPD workforce, these include detectives and detective sergeants assigned to three units: the violent crimes unit (VCU), the burglary crimes unit (BCU) and the special investigations unit (SIU). VCU handles significant violent crimes or pattern crimes occurring in the City (primarily homicides and non-fatal shootings). BCU handles all burglaries occurring in the City. SIU employs a focused deterrence model which identifies the most violent repeat offenders in the City who are responsible for a significant portion of crimes. SIU partners with service providers, and gives these offenders a choice of changing their life for the better (supported by community partners) or facing significant consequences from the criminal justice system (if they continue to commit crimes).

These three units were all developed within the last five years, and reflect an effort by MPD to be innovative in serving the community (SIU) and to improve effectiveness/efficiency in solving complex crimes, including burglary and violent crimes (VCU & BCU). All units are centrally located. The specialized detective units generally work Monday – Friday, day hours. The department is exploring expanding the VCU to include a PM shift in 2017. Specialized detectives are regularly called in from off duty for major incidents.

[Investigative Services 2015 Report](#)

Neighborhood Officers: Representing about 3% (16 FTE) of the sworn MPD workforce, these officers include both neighborhood police officers (NPO's) and neighborhood resource officers (NRO's). NPO's are assigned full-time to a specific neighborhood to engage in proactive work and long-term problem solving. NRO's are assigned to each district to provide some problem-solving attention to neighborhoods with emerging issues.

Neighborhood officer hours and day off rotations vary by the district and neighborhood. Neighborhood officers are expected to have flexibility to meet the needs of their neighborhood.

Traffic Enforcement and Safety Team (TEST): Representing about 2% (9 FTE) of MPD's sworn workforce, this unit is responsible for providing focused traffic enforcement and coordinating traffic safety awareness. TEST works in partnership with the media, Traffic Engineering and other community groups to improve traffic safety.

Areas with full-time MPD neighborhood officers:

*State Street
Langdon Street
Darbo-Worthington
Northport-Packers Avenue
Bayview-Braxton
Leopold-Arbor Hills
Burr Oaks-Brams Addition
Allied Drive (2)
Balsam-Russett
Theresa/Hammersley/Park Edge/Park Ridge*

In addition, each district has a neighborhood resource officer (NRO) that works on emerging problem areas in the district.

MPD actively applies for and frequently receives grant funding from the Wisconsin Department of Transportation (DOT) for Traffic Enforcement Safety grants. These grants pay for overtime earned by officers engaged in traffic, motorcycle, bicycle, and pedestrian safety such as seat belt, alcohol, and speed enforcement. A matching requirement from the City is often required, typically 25% and met through the payment of benefits associated with the overtime. The availability of these grants impacts the amount of enforcement provided. For example, in 2014, the TEST unit was reduced for the first part of the year due to staffing constraints and a lack of grant opportunities from the Wisconsin Department of Transportation. This resulted in a reduction of approximately 390 citations per month.

TEST officers generally work Monday through Friday, with a day shift and a smaller noon-8pm shift.

Gang Unit: Representing about 1% (6 FTE) of the total MPD workforce, these officers are responsible for the collection and dissemination of information regarding gang activity in the city. The Gang unit also assists with investigation of gang involved crimes and in staffing events where the potential for gang violence exists. The unit also works collaboratively with local, state and federal law enforcement agencies, social services providers, school officials, correctional officers and community leaders to not only provide gang training but also to assist in making decisions about multi-agency responses for prevention and intervention strategies to gang crime in the Madison area. Gang officers also engage in a variety of proactive preventive efforts, such as mentoring, home visits and family/parent collaboration. The unit's supervision is centralized, but the individual officers generally work out of a district station with one assigned to each district.

The gang unit generally works Monday through Friday, day hours.

Mental Health Officers: Representing about 1% (5 FTE) of the sworn MPD workforce, these officers work to address both district-specific and city-wide mental health systems issues and conduct outreach to individuals who are generating or likely to generate police calls for service due to their mental illness. The mental health officers work to address mental health issues in the community to mitigate demands on patrol resources most often tasked with providing services to people with mental illness. The unit's supervision is centralized, but the individual officers generally work out of a district station with one assigned to each district.

[*Mental Health Officer 2015 Report*](#)

Mental Health Officers work Monday through Friday, either on a noon – 8pm shift or a 2pm – 10pm shift.

Educational Resource Officers: Representing less than 1% (4 FTE) of the sworn MPD workforce, these four officers are assigned to each of the Madison Metropolitan School District high schools. The ERO's work closely with school staff on safety and behavior issues in the schools, and also work to develop relationships with students.

Educational Resource Officers work Monday through Friday, day hours during the school year. They fill in for patrol officers during summer months, with varying hours.

These nine functional units were selected as a representation of the style of MPD policing. The MPD has a notable history of working to balance proactive and reactive service provision in an effort to ensure equitable outcomes for all of the City's residents. Madison's current policing style is deeply engrained in

the MPD culture, and the department has engaged in community and problem oriented policing for decades. The mental health liaison program is core to MPD's Specialized Policing Response and represents one of the most significant investments in the MPD workforce from a systems perspective.

There is no single process used to create specialized units within MPD. Most often, the department will recognize a need or gap in service that is being provided, and explore innovative ways to effectively and efficiently deliver service. Specialized units can also be formed in connection with grant funding or community input. New units sometimes are formed with newly authorized positions, and sometimes by re-allocating existing positions.

A number of factors unique to Madison and MPD impact the needed level of MPD staffing:

- Madison is an urban center with a considerable daily influx of 121,674 commuters and visitors (OnTheMap, 2016).
- Special events requiring police resources for staffing and planning are a regular occurrence in Madison. For example, through the first three-quarters of 2016 there had already been thirty-five significant events requiring MPD planning and overtime staffing (see Appendix F for examples).
- Wisconsin has been a swing state in national elections, resulting in regular campaign/dignitary visits during election years (requiring significant police resources for staffing and planning). There were nine candidate visits through the first three-quarters of 2016.
- Madison is the home to the University of Wisconsin and the State Capitol. While these entities have their own police departments, they service only their respective properties. Both create significant law enforcement demands in the City of Madison for which MPD is responsible. As an example, the University of Wisconsin Police Department is responsible for policing actual UW sporting events (football, basketball, etc.) but all of the associated activity taking place outside UW property is MPD's responsibility.
- Alcohol is a major issue in Wisconsin culture; Madison is rated as the 4th "drunkest" city in the United States (Stebbins, 2016) and the University of Wisconsin-Madison is the number one "party school" in the country (College Rankings – Party Schools, 2016). Alcohol-related behavior creates significant workload for MPD.
- Madison's citizens expect a high level of service from MPD. While workload has forced the department to reduce response to certain types of incidents (minor thefts, etc.) MPD continues to respond to other low-level events (like property damage car accidents) that some other police departments do not.
- MPD has a strong history of engaging with the public, through neighborhood events, community meetings, foot/bike patrol, etc. All of these require officer time.
- MPD continues to have high standards for its officers. This requires significant effort and time in the areas of recruiting, selection, and training. For example, MPD is one of only three agencies in the State of Wisconsin that runs an in-house pre-service training academy. Most agencies send officers to the technical college academies that meet the state mandate of 720 academy training hours. New MPD officers are trained in-house, primarily by MPD personnel, and receive 864 hours of academy training. MPD also works hard to attract a qualified and diverse workforce. These efforts includes advertising, campus visits, and offering more than thirty off site testing dates across the Midwest. The MPD workforce is extremely well educated; about three-quarters of all sworn personnel have a college degree, and nearly fifteen percent have a masters or professional degree.

Prior Staffing Studies

Five staffing studies dating back nearly twenty five years (1993, 1997, 2003, 2007, and 2008) provide context to the work of the 2016 study.

- 1993: Alders, MPD Command Staff and MPPOA representatives proposed mandatory minimum staffing levels for patrol shifts. Increasing staffing by 30-45 officers in order to reach a ratio of either 1.8 officers per thousand (based on FBI data for comparable national cities) or 1.84 officers per thousand (based on the twelve largest cities in Wisconsin).
- 1997: The committee consisted of two alders; two MPD management representatives; two MPPOA representatives; one Local 60 representative; and one representative of the Mayor's office. The Committee's report specifically recommended that the department staff to a level of 1.8 officers per thousand residents (which would have required sixteen additional officers at the time the report was submitted). The report noted that MPD sworn staffing was below national averages and below the level for Wisconsin's twelve largest cities. The report also made some specific recommendations about civilians and other ranks: Detective positions should equal 15.4% of overall commissioned strength; civilian staffing should be 0.41 civilian employees per thousand residents.
- 2003: Alders, MPD Command Staff and MPPOA representatives recommended continuing with department decentralization efforts. The report recommended increasing staffing by thirteen officers in order to maintain a minimum staffing ratio of 1.8 sworn officers per 1,000 residents. The committee also recommended increasing staffing in future years, with the goal of meeting the ratio of 1.9 officers per 1,000 residents in 2008, and 2.0 officers per 1,000 residents in 2010 and beyond.
- 2007: *Patrol Staffing* - The Common Council provided budgetary support for MPD to have a staffing study performed by an outside vendor. Etico Solutions was selected, and completed an extensive report in 2008. 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). The process does not directly address staffing for positions other than patrol. The vendor presented the methodology and results to the Common Council in 2008, and also provided the mechanism for MPD to repeat the process internally. This has been done annually (with some exceptions) since then.
- 2008: *Detectives/Investigators* - In late-2008, Etico was also contracted to perform a staffing study for the ranks of Detective and Investigator. The methodology utilized was not the same as the patrol study, given the differences in available workload data for the ranks/functions. The report recommended the addition of nine additional detective positions, the reassignment of one detective position, and the addition of two additional investigator positions (for computer forensic analysis). The methodology utilized in this analysis does not lend itself to being repeated internally, so the process has not been conducted for these ranks since 2008.

Mechanisms for Determining Appropriate Police Staffing Levels

Prior MPD staffing studies have used different mechanisms to estimate appropriate department staffing levels. Historically, agencies have relied on one of several approaches to determining staffing:

Crime trends – As policing professionalized in the early 20th century, the goal of police operations became crime reduction (McCabe, 2012). The benchmark for police staffing became crime rates and trends. The more crime, the more police officers hired. On face value this approach seems fitting, but it is a rather inefficient approach to staffing. A focus on crime rate reductions does not consider the costs or side effects of the strategies used to achieve them (Sparrow, 2015). Using this model provides incentives for poor performance and disincentives for good performance. Crime control is just one of several components of the police mission (Sparrow, 2015). A significant portion of police time is spent on issues completely unconnected to crime (traffic crashes/enforcement, mental health crises, medical emergencies, civil disputes, etc.). A significant portion of police time is spent on issues completely unconnected to crime (traffic crashes/enforcement, mental health crises, medical emergencies, civil disputes, etc.). Crime is a symptom of larger systemic issues that MPD is involved in which includes but is not limited to interaction with mental health providers, social workers, and the health care system.

Population ratios – One of the most commonly utilized methods for evaluating police staffing levels is using officer-to-population ratios (the number of sworn officers per 1,000 citizens). The benefit of such an approach is clear: it requires little work and data is easily available. The FBI's annual crime report includes information on police agency staffing levels, nationally and regionally. This information, however, is not necessarily useful for determining appropriate staffing of any particular agency, and the FBI does not recommend using it for that purpose:

Because of law enforcement's varied service requirements and functions, as well as the distinct demographic traits and characteristics of each jurisdiction, readers should use caution when drawing comparisons between agencies' staff levels based on police employment data from the UCR program. In addition, the data presented here reflect existing staff levels and should not be interpreted as preferred officer strengths recommended by the FBI. (Police Employee Data, n.d.)

The International Association of Chiefs of Police (IACP) position on police to population ratios is similar:

Ratios, such as officers-per-thousand population, are totally inappropriate as a basis for staffing decisions. Accordingly, they have no place in the IACP methodology. Defining patrol staffing allocation and deployment requirements is a complex endeavor which requires consideration of an extensive series of factors and a sizable body of reliable, current data (International Association of Chiefs of Police. N.d.)

This approach only looks at agency size and population, and does not account for any other factors related to appropriate police staffing (crime rates, community expectations, policing philosophy, socioeconomic factors, geographic size, etc.). Also, census populations only include residents of the community in question and do not include others who visit the community but influence workload for police (commuters, college students, tourists, etc.).

Two communities with similar populations could have massively divergent needs for their police departments. This could be a result of different crime rates, special events, community issues, or public expectations.

As a result, population ratios alone are not a particularly useful tool for determining precise police staffing levels. They can, however, provide useful context when assessing agency strength. An agency with a lower than average officer-to-population ratio may indeed be understaffed, and comparison with other agencies can be one aspect of making that determination.

Benchmarking – This method compares the agency with one or more “similar” agencies, in order to draw conclusions about appropriate staffing levels, strategies, and outcomes. The objective is to eliminate some of the inaccuracy of officer-to-population ratios, by limiting the comparison to agencies/communities that are similar.

Benchmarking, however, is still a relatively inaccurate method to determine appropriate police agency staffing levels. The first problem is how the comparable agencies are determined. Identifying comparable agencies based on only a few variables (population, crime rate) is simpler but does not provide a full picture of the agency or community. More variables need to be identified and considered to more accurately select a “similar” agency; even then, the community and agency may or may not be a relevant subject for comparison. (Wilson, 2012)

Another issue with benchmarking is the philosophy of the respective police agencies. An agency focused on community-oriented policing and problem solving will have higher staffing needs than one oriented towards traditional incident response.

Finally, benchmarking assumes that the comparison agencies are staffed appropriately. If agencies chosen for comparison are all understaffed, then the exercise is not useful.

Minimum staffing – This model is based on predetermined minimum staffing levels, with overall agency staffing determined by the need to maintain those levels. The staffing levels are typically determined by past practice, supervisory judgment, or collective bargaining. If the minimum staffing levels are not determined by some kind of workload analysis or other objective process, this is not an accurate way to determine appropriate police staffing levels.

Authorized/budget – This model simply bases agency staffing levels on available funding. It is fairly common for police staffing levels to be based on budget levels, although community needs may or may not be adequately considered during the process. The US Department of Justice, Office of Community Oriented Policing (COPS) warns that this model “...can become an artificial benchmark for need, creating the perception that the agency is understaffed and overworked if the actual number of officers does not meet the authorized number.” (Wilson, 2012)

Workload – This model uses actual officer workload data to determine staffing needs. It is generally considered the most accurate and instructive method for determining workforce levels. The advantages to using a workload analysis model are clear: the process is data based and focused on the agency in question. Workload analysis will generally provide a specific result (exactly how many positions the agency should staff based on the data), and the analysis can be repeated on regular basis (using updated data).

Conducting a workload analysis is a labor intensive process, and not all work units will have adequate data available. In fact, workload analysis is typically used only for the patrol function, given the availability of computer aided dispatch (CAD) data that tracks officer workload. Workload analysis is generally viewed as the preferred mechanism for evaluating police staffing levels:

[E]ven with shortcomings, allocation models based on actual workload and performance objectives are preferable to other methods that might not account for environmental and agency-specific variables. (Wilson, 2012)

The earlier MPD Staffing committee reports focused on officer-to-population ratios to make recommendations. The 2008 Etico study was a workload analysis, limited to the patrol function. Actual MPD staffing has most often been determined through the budget process. While MPD's authorized strength has increased over the years, staffing increases have been based on individual budget requests (for specific positions/units, to accept grant funding, etc.) vetted through the annual City budget process. None of the prior staffing reports/studies has been the driving force for any MPD staffing increases.

Community Expectations

A critical element of MPD's operating philosophy is that the police and community are one in the same, operating in partnership for the same goals. The expectations set by residents for their police department should ultimately drive the department's staffing, both in overall agency size and in staffing allocation within the agency. Community members will also have expectations about police response to specific incidents: the quality of service provided, professionalism and communication skills of the officer(s), etc.

Discerning actual community expectations can be challenging. According to Sparrow (2015), "the only way to measure the underlying rate of victimization is to conduct a general survey of citizens asking about their victimization and their reasons for failing to report crime to the police." However, the most vocal citizens may not be representative of the overall community.

For more than a decade, MPD has used community surveys in an attempt to get feedback from the public on their service provision. The community surveys are an understanding of the perceptions of community members by district as it relates to a series of questions related to public safety. Once a system of conducting surveys is set up, you "can use that system to answer many other important questions about policing. Specifically, we can learn a great deal about citizens' fears and their self-defense efforts, as well as their criminal victimization... and general attitudes toward the police and how those attitudes are formed" (Sparrow, 2015). The MPD survey system is not set up to provide a representative sample of citizens; rather, outreach is done through the MPD website and district outreach.

In 2015, the total number of respondents to the MPD citizen survey across the city was 1,706 yielding at 0.8% response rate of the 18+ population.

Demographic information of the respondents includes:

- 54.8% live in the city for 10+ years
- 88.8% are homeowners, compared to 46.1% homeowner rate (Population and Housing Narrative Profile)
- 65.9% are female
- 94.4% are 30+ years old; 59.1% are 48+ years old
- 94.1% are Caucasian/White
- 57.8% are members of their neighborhood association

Prior to this staffing study, MPD did not summarize the district data into a citywide dataset. The process of creating a citywide dataset uncovered several issues with scoring criteria and scales used for feedback from the community that ensure comparability across questions.

The findings regarding problems listed in Table B include updated scoring criteria to ensure comparability across all questions posing problems in the community. All scales for Table B reflect a 0-3 score where 0 is indicative of “no problem” or “not sure” and 3 represents a “big problem.” Ideally the scores will be as close to zero as possible. The table below highlights the five most significant issues in each district and across the city according to the respondents.

Table B.

Q1-Q5: Problems	Central Rating Average	East Rating Average	North Rating Average	South Rating Average	West Rating Average	Citywide Rating Average
1 Assault/Battery	0.90	0.56	0.33	0.41	0.61	0.52
2 Sexual Assaults	0.95	0.62	0.21	0.33	0.26	0.39
3 Street Robbery	0.78	0.62	0.53	0.60	0.96	0.72
4 Domestic/Family Violence	0.51	0.46	0.46	0.37	0.53	0.47
5 Hate Crimes	0.29	0.21	0.15	0.16	0.25	0.21
6 Gun Crimes	0.60	0.52	0.40	0.51	1.01	0.66
7 Burglary/Break-Ins	1.41	1.13	0.93	1.30	1.89	1.40
8 Vandalism	1.15	0.81	0.67	1.00	1.05	0.92
9 Graffiti	1.15	0.61	0.47	0.57	0.59	0.60
10 Car Theft	0.68	0.50	0.51	0.51	0.81	0.62
11 Drug Use in Public	0.77	0.60	0.68	0.54	0.63	0.62
12 Drug Sales on Street or in Drug House	0.76	0.84	0.86	0.74	0.86	0.83
13 Prostitution	0.18	0.16	0.19	0.25	0.09	0.16
14 Drinking in Public	0.96	0.64	0.50	0.76	0.35	0.56
15 Aggressive Panhandling	0.86	0.36	0.19	0.33	0.19	0.30
16 Loud Music/Parties	1.06	0.58	0.46	0.72	0.55	0.60
17 Barking Dogs	0.61	0.78	0.80	0.68	0.70	0.73
18 Garbage/Litter	0.90	0.67	0.75	0.75	0.67	0.71
19 Gang Activity	0.46	0.29	0.41	0.34	0.76	0.50
20 Loitering	0.86	0.48	0.47	0.43	0.75	0.59
21 Truancy	0.31	0.23	0.24	0.22	0.33	0.27
22 Speeding Vehicles	1.86	1.73	1.69	1.65	1.72	1.71
23 Reckless Driving	1.41	1.30	1.14	1.16	1.20	1.21
24 Abandoned Cars	0.36	0.37	0.24	0.27	0.28	0.30
25 Drunk Driving	0.78	0.59	0.33	0.46	0.30	0.43
26 Illegally Parked Cars	1.09	0.56	0.36	0.83	0.46	0.57
27 Traffic Sign/Signal Violations	1.55	0.97	0.87	1.14	0.91	1.00
28 Loud Vehicle Music/Equipment	1.25	1.04	0.95	0.97	1.12	1.05
29 Rundown Houses/Buildings	0.88	0.71	0.69	0.56	0.60	0.65
30 Overgrown Shrubs/Weeds	0.79	0.81	0.74	0.58	0.70	0.71
31 Vacant Lots	0.28	0.25	0.19	0.19	0.15	0.19
32 Adequate Public Street Lighting	0.79	0.97	0.75	0.69	0.83	0.82

As reported in the survey, the most significant problems in the community are relatively consistent across districts. Survey respondents cited burglary/break-ins, speeding vehicles, and loud music/equipment as their greatest concerns. On the 3 point scale, burglary/break-ins received the highest score of 1.89. According to the scoring criteria, a score of 2 was considered a “small problem.”

MPD makes use of the problems outlined in the community survey by reading the supporting comments provided by the survey respondents obtaining insight to the issues in the community and strategize possible solutions. The survey also provides feedback from the community on how the department is performing.

The subset of findings regarding Community Expectations listed in Table C is scored on a scale of 0-3 where 0 is “never” or “strongly disagree” and 3 is “always” or “strongly agree.” Ideally, the scores will be as close to three as possible. The table below highlights the five most significant comparable community expectations in each district and across the city according to the respondents.

Table C.

Q6-Q7: Community Expectations	Central Rating Average	East Rating Average	North Rating Average	South Rating Average	West Rating Average	Citywide Rating Average
1 It is important for community members to work with police to solve local problems.	2.57	2.60	2.66	2.71	2.69	2.66
2 My neighborhood is a safe place to live.	2.04	2.13	2.17	2.24	1.91	2.08
3 It is important for citizens to take an active role in preventing crime.	2.48	2.46	2.51	2.57	2.55	2.52
4 If I saw children in my neighborhood causing problems, I would likely first ask them to stop before I called the police to get involved.	2.06	2.07	2.09	2.20	1.94	2.05
5 The police solve crimes quickly.	1.54	1.56	1.63	1.63	1.64	1.61
6 I believe the police would respond quickly if I were to call them about an emergency.	2.16	2.20	2.22	2.32	2.23	2.24
7 I trust the leadership of the Madison Police Department.	2.06	2.04	2.25	2.30	2.37	2.24
8 The police provide quality service to the residents of my community.	2.16	2.18	2.24	2.36	2.35	2.28
9 The Madison Police treat people with respect.	1.97	2.01	2.15	2.18	2.27	2.16
10 The Madison Police treat people fairly.	1.91	1.97	2.11	2.15	2.23	2.11
11 The Madison Police enjoy helping people.	2.00	2.09	2.17	2.23	2.28	2.19
12 The Madison Police act professionally.	2.13	2.18	2.27	2.28	2.38	2.28
13 The Madison Police understand my values.	1.88	1.89	2.03	2.13	2.21	2.07
14 The Madison Police use appropriate force.	1.74	1.83	1.99	2.01	2.17	2.01
15 The Madison Police have earned my trust.	1.99	1.98	2.18	2.25	2.35	2.20

Just as with the questions regarding community issues, MPD makes use of the community expectations outlined in the community survey by reading the supporting comments provided by the survey respondents to obtain insight to improving service provision within each district.

In addition to the annual community survey, MPD previously sought citizen feedback on individual incidents, through the use of random surveys mailed to individuals contacted by officers during the course of their duties, which could be the victim or the offender. In his book *Recognizing Value in Policing: the Challenge of Measuring Police Performance*, Mark Moore develops a framework for holding police departments accountable where he proposes a view of client satisfaction that includes assessment of the experience of those arrested or cited (2002). In line with Moore’s philosophy, the process of random mailed surveys in MPD should be re-initiated if possible.

According to NYPD Assistant Commissioner Ronald J. Wilhelmy, “...we fail to measure what may be our highest priority: public satisfaction. We also fail to measure quality of life, integrity, community relations, administrative efficiency, and employee satisfaction, to name just a few other important areas.” In addition to more precisely measuring public satisfaction with police service, MPD recognizes there is also value in using other data sources as a way to cross check and validating trends, such as the use of public health data.

While Madison's citizens expect a high level of service from MPD, workload has forced the department to reduce response to certain types of incidents (including minor thefts such as bicycles, etc.). Additional information regarding workload measures will be presented in the following sections.

Analysis

Workload analysis is the favored mechanism for evaluating police staffing, though it is generally only possible to perform a comprehensive workload review for the patrol function. Utilizing a combination of these approaches is beneficial to help manage complex police departments.

Population Ratios

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 is for those serving populations of more than 250,000; the Group II category is for agencies serving populations between 100,000 and 249,999. Regional data for each group is also available. As indicated above, these averages should not be viewed as a hard and fast model for determining precise police staffing levels. They do, however, provide valuable context for understanding appropriate staffing levels.

According to the US Census Bureau, Madison's estimated population as of July 1, 2015 is 248,951 (Madison city, Wisconsin, n.d.). Assuming the current rate of growth realized between 2010 and 2015, Madison's population will likely exceed 250,000 in 2017. Due to the fact that Madison is on the cusp of the Group I category, both Group I and Group II information are discussed.

According to the 2014 FBI data, the most recent year for which data is available, the average number of sworn law enforcement officers per 1,000 inhabitants for Group I agencies (nationally) was 2.6. In the Midwest region (which includes the states of: Illinois, Indiana, Michigan, Ohio, Wisconsin, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota and South Dakota), the average was 3.0 sworn officers per 1,000 inhabitants. In the East North Central portion of the Midwest region (Illinois, Indiana, Michigan, Ohio and Wisconsin) the average was 3.3 sworn officers per 1,000 inhabitants (See Table D).

For Group II agencies, the average number of sworn law enforcement officers per 1,000 inhabitants was 1.7 (both nationally and for the Midwest region). In the East North Central portion of the Midwest region, the average was 1.8 (See Table D).

How many MPD officers are there currently per 1,000 residents?

Number of police personnel per 1,000 inhabitants is calculated based on the assumption that the City of Madison has a population of 248,951 and 461 sworn police personnel.

$461 \text{ (sworn police personnel)} \div 248,951 \text{ (population)} = 0.0019 \times 1,000 = 1.9 \text{ sworn police personnel per 1,000 inhabitants}$

Note: the exact figure is 1.8517 officers per 1,000 inhabitants; rounding is used for consistency with the data provided by the FBI. The exact figure is provided here as MPD has used a non-rounded figure previously, as did some of the prior staffing reports. The remainder of this document will round for consistency with FBI data.)

Table D.

	Group I Agencies	Group II Agencies
Average number of sworn law enforcement employees per 1,000 inhabitants	2.6	1.7
Midwest region	3.0	1.7
East North Central Midwest region	3.3	1.8

FBI data also breaks down Group I agencies into subsets:

Table E.

Group I subset population	Officers per 1,000 inhabitants
250,000-499,999	2.0
500,000-999,999	2.5
1,000,000 and up	3.0

These figures are national; the FBI does not break down Group I subsets by region. However, a review of agencies in the Midwest region in the 250,000 – 499,999 subset shows an average of 2.2 sworn officers per 1,000 inhabitants.

In 2016 the MPD's commissioned strength is 1.9 employees per 1,000 inhabitants. To the respective average MPD would need staffing adjustments as follows:

Table F.

Staffing Average (sworn employees per 1,000 inhabitants)	Adjustment to MPD Sworn Staffing
3.3 (Group I; Midwest Region)	Add 361 officers
3.0 (Group I; East North Central section of Midwest Region)	Add 286 officers
2.6 (Group I; National)	Add 186 officers
2.2 (Group I; 250,000 – 499,999 subset in Midwest Region)	Add 87 officers
2.0 (Group I; 250,000 – 499,999 national subset and 2003 Staffing Committee recommendation)	Add 37 officers
1.8 (Group II; East North Central section of Midwest Region)	Remove 13 officers
1.7 (Group II; National & Midwest Region)	Remove 38 officers
1.7 (Group II; 150,000 – 249,999 national subset)	Remove 38 officers

**See appendix/notes for data set information*

None of these groups/averages reflect a perfect comparison for MPD staffing. The national Group I average, for example, includes the nation's largest cities (New York, Los Angeles, Chicago, etc.), and those agencies obviously have unique policing needs. Group II includes many cities with populations just over 100,000 (Kenosha, Wisconsin; Clovis, California; Sandy Springs, Georgia; etc.). More than 60% of the cities reflected in Group II have a population of less than 150,000. However, Table F shows that Group II cities with populations between 150,000 – 249,999 have the same staffing ratio as the National and Midwest region for all Group II cities.

Evaluating police staffing based purely on population ratios is of limited utility (as described above) and MPD does not need to add hundreds of officers to provide police service to the citizens of Madison. However, this data provides context for evaluating MPD staffing and shows that MPD has not met the staffing levels recommended by prior staffing committees.

The figures above all reflect sworn law enforcement employees (those with arrest authority). The FBI also provides data on all law enforcement employees, to include sworn and civilian in Table G.

Table G.

	Group I Agencies	Group II Agencies
Average number of law enforcement employees per 1,000 inhabitants	3.4	2.2
Midwest region	3.5	2.0
East North Central Midwest region	3.7	2.1

The 250,000- 499,999 Group I subgroup averages 2.6 law enforcement employees per 1,000 inhabitants. The Group II averages 2.2 law enforcement employees per 1,000 inhabitants. MPD currently has 2.3 employees (sworn and civilian) per 1,000 inhabitants.

Overview of Workload Data

Measuring officer workload outside of the patrol function varies within MPD. Volume, timeliness, accuracy, cost-efficiency and client satisfaction are all important attributes of policing to measure; however, availability of data varies significantly by work unit/function. Traditional output metrics (e.g. number of arrests and citations) are most easily available, but don't necessarily speak to police effectiveness, efficiency, or citizen satisfaction.

The best available data is for the patrol function. Patrol officers are dispatched to incidents through the use of a computer aided dispatch (CAD) system. Most of a patrol officer's activities result in a CAD entry, and this data can be extracted (sometimes with significant effort) from the CAD. Rather than just counting incidents (calls for service), CAD data will provide actual workload – how much time officers spend on their assigned activities. This provides a fairly comprehensive picture of how much work patrol officers do. CAD data is not perfect. Some officer workload (administrative tasks, property tagging, report completion, etc.) is not reliably captured on the CAD. Also, patrol work is often performed by non-patrol units (CPT, neighborhood police officers, etc.) during peak times, and it is generally not possible to classify this workload as patrol work which underreports the actual amount of workload for the patrol function.

MPD Use of Patrol Workload Data

The annual patrol workload analysis that MPD has been completing since 2009 is based on the methodology advised by the Etico study. This methodology is consistent with the Police Personnel Allocation Manual, developed by the Northwestern University Center for Public Safety and is consistent with police staffing formulas recommended by the International Association of Chiefs of Police (IACP). The workload analysis provides a comprehensive review of patrol staffing needs. The key variables of this analysis include CAD workload data, additional workload data (administrative time, reporting time) and payroll/leave data. This process is used for multiple purposes:

- To determine the appropriate level of overall MPD patrol staffing
- To allocate existing MPD patrol officers across shifts (by time of day)
- To allocate existing MPD patrol officers by district (geographically)
- To determine the exact geographic patrol areas within each district

The first portion of the analysis is externally focused, assessing how many officers should be assigned to the patrol function. The remaining steps are internally focused, determining how to best allocate existing patrol resources.

This process has been completed on an annual basis using workload data since 2009. Prior to 2009, allocation of existing patrol resources was made based on more basic data sets (calls for service, crime data, etc.). The process was not completed for 2012 or 2013 as a result of significant software transitions.

Overall patrol staffing needs: The 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. While the process does not directly address staffing for positions other than patrol officer, some positions – particularly patrol sergeant – have a direct relation to patrol staffing levels due to supervisory span of control guidelines.

The first portion of the patrol 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) records. This data is supplemented by Dictaphone and field report data, allowing the 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 needed for administrative tasks (vehicle/equipment maintenance, etc.) is also factored in, and workload is split between reactive and proactive work (to the extent the data allows).

The workload total actually understates true patrol workload for several reasons. For example, CAD data is sorted by unit type, and only patrol officer data is included in the analysis. However, officers assigned to other functions (CPT, neighborhood, etc.) will assist patrol during peak times, and that workload is excluded. Also, incidents handled through MPD's self-reporting process are not included even though this is work that both MPD and the community would prefer to be handled by an officer in person.

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. Not all work days are assigned to the patrol function (training, special assignment, etc.). An analysis of leave time will determine the shift relief factor (SRF), a number indicating 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. 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. 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.).

The original Etico report recommended that MPD strive to have officers spend 28 to 30 minutes of each hour on reactive activity, with a preference towards staffing to the goal of 28 minutes per hour of reactive time. 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 a reasonable goal for MPD patrol staffing. MPD believes this staffing split is required to provide the level of service that the community expects.

Historically, MPD's patrol function has spent between about 32 – 33 minutes per hour on reactive work. The difference between 30 and 33 minutes of reactive time per hour seems minor. However, it is

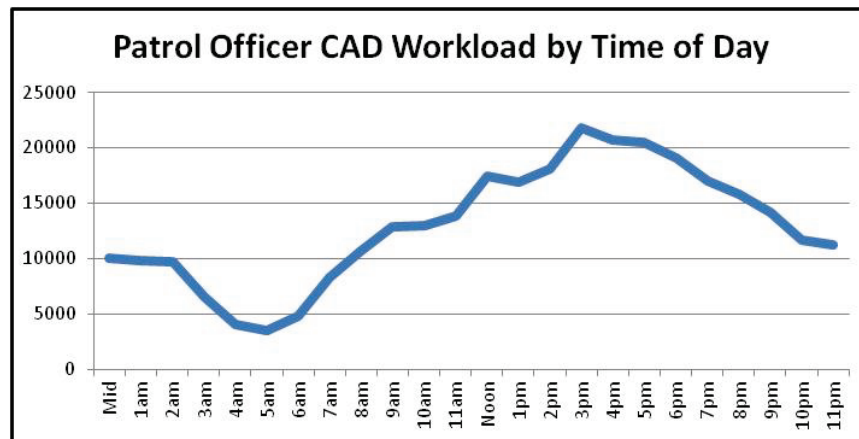
important to recognize that these figures are based on averages – per officer – across all hours of the day and all days of the year. Having a lower reactive workload time per hour improves the ability of the department to engage in proactive work (traffic enforcement, foot patrol, community engagement, etc.). In fact, if MPD patrol is staffed to the level so that 30 minutes per hour are required for reactive work (rather than 32 minutes per hour), almost twenty-five officer hours per day are freed to engage in proactive activity. This also increases visibility, efficiency and response time.

The most recent analysis performed under this methodology was performed in early 2016, using 2015 data. The full report is attached as Appendix K; however the analysis showed:

- MPD patrol officers responded to 136,049 patrol incidents during 2015. This resulted in 136,161 hours of reactive patrol workload. This reflected an increase in patrol workload of about 4% from 2014. Reactive patrol workload has been increasing since MPD began performing this analysis; 2015 reactive patrol workload reflects a 23% increase from 2007.
- The shift relief factor in 2015 was 1.95. This means, generally, that MPD needs to have 1.95 patrol officers assigned to patrol for each position to be staffed every day of the year. The shift relief factor has remained fairly consistent since 2008.
- To achieve a balance between of thirty minutes reactive work and thirty minutes proactive work, the 2015 workload and leave data demonstrate a need for an additional thirteen officers in patrol.

Allocating Existing Patrol Resources: MPD also uses workload data annually to allocate existing patrol officer positions. The first step in this process is to determine how many officers/beats are assigned to each of the five patrol shifts. This begins with an analysis of CAD workload by time of day, reflected in Figure 1.

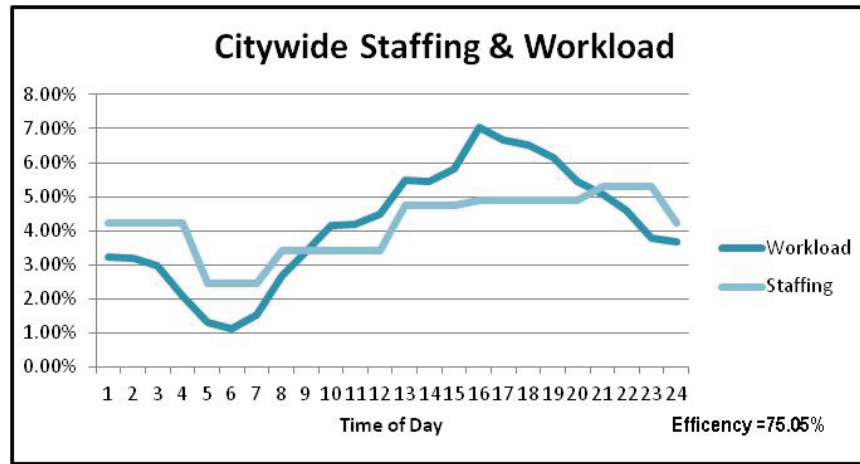
Figure 1.



The workload data is then compared to staffing levels by time of day to evaluate allocation efficiency. As an illustration of this, in 2010 MPD transitioned from a traditional three-shift patrol staffing plan to a five-shift model. This five-shift model incorporated “power” shifts that overlapped the major shifts and put more officers on patrol during peak times. MPD believes the five shift model has increased MPD efficiency by ensuring adequate coverage during peak times.

Figure 2 shows the staffing levels by time of day compared to workload. This analysis is reviewed annually to ensure optimal efficiency is maintained.

Figure 2.



After the transition to the five-shift patrol staffing plan, allocation efficiency improved approximately 7%.

Once the number of officers/beats per shift is determined, the allocation of those positions by district is assessed. Again, workload and staffing are compared to determine efficiency. A reflection of one patrol allocation model is presented in Table H.

Table H.

	West	South	Central	North	East
7a-12p	1.34%	0.84%	2.79%	-2.56%	-2.41%
12p-3p	-0.36%	-0.33%	3.49%	0.95%	-3.75%
3p-8p	0.23%	-0.63%	0.91%	0.66%	-1.17%
8p-11p	0.84%	-0.43%	2.56%	-0.51%	-2.46%
11p-4a	0.89%	0.42%	-3.21%	1.55%	0.35%
4a-7a	-2.10%	0.87%	0.54%	0.20%	0.49%

The figure for each time period/district shows the match between staffing and workload; a positive number indicates a greater proportion of staffing than workload; a negative number indicates a lower proportion of staffing than workload. The objective is to have each figure as close to zero as possible.

Once patrol beats/officers are distributed between districts, each district will determine the precise patrol area for each, based on workload data per MPD sector (each district is made up of individual sectors, and workload data is available by sector).

While this process is performed annually, typically there are not significant adjustments needed.

Additional MPD Data

CAD data can also provide some insight into the workload of other units/functions, though it will not be anything near a comprehensive representation. While a patrol officer will be connected to his/her radio (and the dispatch center/CAD) for their entire shift, personnel assigned to other work units are not.

The following table shows highlighted data by MPD district which contextualizes the operations of MPD.

Table I.

	West	South	Central	East	North	Other**
All CAD Workload*	100,947	62,701	79,274	89,798	64,059	26,507
	23.9%	14.8%	18.7%	21.2%	15.1%	6.3%
Patrol Officer CAD Workload	77,581	44,774	55,577	70,924	48,453	10,543
	25.20%	14.54%	18.05%	23.04%	15.13%	3.42%
District Operations CAD Workload^	89,129	53,253	64,323	78,891	56,222	13,416
	25.1%	15.0%	18.1%	22.2%	15.8%	3.9%
Area (Square Miles)	26.49	9.14	3.80	24.11	15.89	
	34%	12%	5%	20%	29%	
Street Miles	365	108	66	280	144	
	38%	11%	7%	29%	15%	
UCR Part 1 Crimes (2013 – 2015)	7,308	2,791	5,028	5,519	2,880	
	31%	12%	21%	23%	12%	
Population (2010)	83,215	30,046	45,254	44,689	30,141	
	36%	13%	19%	19%	13%	
Population Density (people per square mile)	3,165	3,287	11,940	1,899	1,975	

*1/1/14 – 7/1/16; excludes on-duty training & on-duty court; all unit types, including civilian; reflects hours of CAD workload

**Includes response to other jurisdictions and workload with no sector data

^Includes patrol officers, patrol sergeants, CPT, NPO, NRO and ERO

Workload Trends (January – June; 2014, 2015 & 2016)

The annual workload analysis previously described demonstrates a steady increase in MPD workload. The tables below show workload trends, showing citywide CAD data for the first half (January 1 – June 30) of each year. Data is shown for several categories: all MPD CAD workload, patrol officer CAD workload, and district operations CAD workload (patrol officers, patrol sergeants, neighborhood officers, community policing teams and educational resource officers).

CAD Workload*

	All CAD Workload**	Patrol Officer Only^	District Operations^^ (includes patrol officers)
2014	79,780	61,057	68,529
2015	85,967	60,776	70,966
2016	93,898	65,501	76,535

*Reflects hours of CAD workload

**Includes all CAD workload tied to an MPD unit (patrol, operations, detective, command, Forensic Services, etc.)

^Patrol officer CAD workload only

^^Includes CAD workload for patrol officers, patrol sergeants, CPT, NPO, NRO and ERO

From 2014 to 2016, all CAD workload increased **17.7%**. Patrol Officer workload increased by **7.3%** and District Operations workload increased by **11.6%**. During this time period, MPD sworn staffing grew by 2.8%. The number of patrol staff needed to manage an increasing CAD workload is dictated by the Etico study.

The table below shows the same workload data, broken down by district. Also included is Uniform Crime Reporting Part I Crime Data (for the full years of 2013, 2014 and 2015).

All CAD Workload	West	South	Central	East	North	Other**
2014	20,466	10,589	13,737	17,244	12,262	5,482
2015	20,692	12,402	18,741	18,087	12,948	5,096
2016	20,217	14,277	17,687	19,052	14,261	5,832
Patrol Officer CAD Workload						
2014	16,815	8,180	10,215	13,784	9,706	2,356
2015	15,700	8,771	11,206	13,715	9,493	1,888
2016	15,150	9,604	11,923	15,873	10,858	2,090
District Operations CAD Workload^						
2014	18,678	9,301	11,358	15,072	11,252	2,868
2015	18,098	10,554	13,336	15,029	11,218	2,551
2016	17,660	11,927	14,090	17,796	12,323	2,738
UCR Part I Crimes*						
2013	2,244	882	1,606	1,778	1,012	7,522
2014	2,486	992	1,682	1,915	937	8,012
2015	2,578	917	1,740	1,826	931	7,992

*Full year data

**Includes response to other jurisdictions and workload with no sector data

MPD uses this information to help inform staffing decisions through the application of the Etico workload analysis. However, "...we must take seriously the fact that other important duties of the police will never be captured through crime statistics or in measures of enforcement outputs" (Sparrow, 2015). The following section explores the additional workload drivers that are important to understand to determine staffing needs for a complex, proactive policing organization

Workload Drivers by Unit

To demonstrate the value of tracking workload drivers, within this section, each of the nine functional units and the associated measurable workload drivers for each unit are presented. While workload drivers can be identified for each of the nine functional units, it is difficult to measure every workload driver given the current systems in place to capture data.

The most common data elements found include CAD incidents and CAD workload. Typically, any time on officer takes an action and notifies the dispatch center about it, an “incident” is created in the CAD. Most often this will be a call for service, where a citizen calls to request an officer for something. However it also includes officer-initiated activities like traffic stops.

CAD incidents differ from CAD workload because CAD workload is actually measuring the amount of officer time – in hours – that officers are working on incidents. As an illustration, a noise complaint and a homicide will each count as a single CAD “incident.” But the noise complaint will require minimal officer time, while the homicide will require hundreds of officer hours. CAD workload captures this difference.

Patrol

	West	South	Central	East	North	Other**
CAD Incidents *	85,763	49,563	68,728	65,209	52,696	11,086
Miles of roadway	365	108	66	280	144	N/A
Foot patrol (CAD Incidents)	450	423	570	142	105	159
Investigative follow up (CAD incidents)	2,127	1,134	1,380	1,779	1,250	773
Administrative tasks**	Average of 54 minutes per shift per officer					
Training ***	Average of 7.91 days per year per patrol officer					

*1/1/14 – 7/1/16; patrol officers and sergeants

**Multi-year average; patrol officers only

***2015 data; patrol officers only

As indicated in the previous section, workload data for the patrol function is far more robust than that for other work units/functions. This is simply a result of patrol’s integration with dispatch, both for citizen-generated incidents and officer-initiated incidents. The annual patrol workload analysis that MPD has been performing also provides data for administrative tasks (based on surveys/logs) and training time. Even with this level of available information, CAD data likely understates the actual patrol function workload.

Some key data points are not available. For example, the current CAD (operated by Dane County) does not readily allow for officer-initiated workload to be distinguished. While this is not necessary to measure overall CAD workload, it would be helpful to accurately differentiate the amount of workload allocated to citizen complaints and that spent on self-initiated activity. Problem solving is also not easily measured. While some problem solving efforts will be captured as CAD workload (within a number of incident types) many problem solving efforts are not encompassed in CAD data.

District Detectives

	West	South	Central	East	North	Other**
Reported crimes*	7,308	2,791	5,028	5,519	2,880	
Case Assignments***	1,569	1,183	1,166	1,071	849	
Training**	Average of 8.6 days per year per detective					

*UCR Part I crimes; 2013 – 2015

**2015 data

***1/1/14 – 7/1/16; Cases assigned to district detectives,

While it is easy to report crime data, or the number of cases assigned to detectives, these numbers do not capture the actual time needed to complete an investigation. Investigating a crime in 2016 typically will be more complex and require more time than was the case ten or even five years ago. For example, social media (Facebook, Twitter, Instagram, etc.) is often very relevant to criminal investigations, and social media accounts must be examined to be thorough. This requires contacting the companies,

drafting subpoenas, and technical assistance; all of which can be fairly time consuming. The complexity of investigations may also include monitoring jail audio, sending evidence to the crime lab, locating/reviewing video, property disposition and preparing for trials and court. As a result, crime data does not tell the whole story; investigating one aggravated battery (or similar case) in 2016 is not the same as investigating one in 2006.

Community Policing Teams (CPT)

	West	South	Central	East	North	Other**
CAD Incidents*	2,683	1,618	2,553	2,391	2,232	708
CAD Workload*	4,269	2,846	3,890	3,251	3,294	1,457
Foot patrol (CAD Incidents)*	161	14	58	31	35	7
Miles of roadway	365	108	66	280	144	N/A
Investigative follow up (CAD Incidents)*	143	86	51	100	138	53
Alcohol licenses	146	84	260	103	68	
Training**	Average of 12.9 days per year per CPT member					

*1/1/14 – 7/1/16; CPT officers and sergeants

**2015

Some CPT workload will be captured on the CAD as a subset of all CAD data, which is reflected in the table above. This will include some work that is core to the CPT function (foot patrol, traffic enforcement, community meetings, etc.) but will also include work that is supporting patrol (taking or assisting with response to patrol calls, handling on-sight patrol issues, etc.). CPT officers are not tied to dispatch and the CAD in the way that patrol officers are, and much of what they do will not be tracked on the CAD. Most of the things that drive their workload, like citizen complaints that come directly to an MPD district or CPT officer, are also not tracked on the CAD (though ultimately some related workload may be captured on the CAD).

CPT personnel perform a variety of other district functions. These include engaging in problem solving efforts, attending neighborhood meetings, community engagement, making sex offender placement notifications, attending public events, handling low-level citizen complaints, performing traffic enforcement and assisting with major crimes/investigations. Such activities are not regularly captured by the CAD. CPT officers also play a significant role in responding to city-wide events and incidents. These include protests, demonstrations, special events, dignitary visits, initiatives and major crimes. The number of events and people involved is not tracked by MPD; however, a list of commonly occurring citywide events is listed in Appendix F.

Educational Resource Officers (ERO)

	West	South	Central	East	North	Other**
CAD Incidents*	437	497	72	551	657	87
CAD Workload*	434	464	150	435	679	93
Training**	Average of 6.25 days per year per ERO					

*1/1/14 – 7/1/16

**2015

ERO's work very closely with school staff, and during their work days they are as much a member of the school staff as they are an MPD officer. They will create CAD incidents for investigations needing reports, or if additional officers are needed for assistance. However, much of what ERO's do is not documented on the CAD. This is consistent with how both MPD and MMSD view the role of an ERO. The ERO's ideally spend time building relationships with students, providing classroom presentations and working with school staff on a variety of issues. This work is critical to the ERO function, but does not

lend itself to documentation. Other aspects of ERO workload that drive need for service include the number of school staff meetings, request for presence at school events/sporting events, the degree and magnitude of student behavior issues, crimes at schools, investigative follow up and administrative tasks.

Gang Unit

	West	South	Central	East	North	Other**
CAD Incidents*	373	230	217	269	217	341
CAD Workload*	488	324	412	525	259	519
Training**	Average of 9.9 days per year per gang unit member					

*1/1/14 – 7/1/16; gang unit officers and sergeant

**2015

Officers with the Gang Unit show some CAD workload. These include incidents generated by Gang officers and crimes/investigations where Gang officers assist other work units. The core function of the Gang Unit, however, is to work with current gang members and to provide intervention to reduce gang membership. This work is accomplished through meeting with and building relationships in a variety of contexts. Other drivers of this workload include the number of gang members in the City, gang related offenses, gang disputes leading to violence/MPD incidents and administrative tasks.

Mental Health Officers (MHO)

	West	South	Central	East	North	Other**
CAD Incidents*	306	199	441	192	157	77
CAD Workload*	407	458	713	309	261	127
Investigative follow up (CAD Incidents)	50	26	50	34	17	20
Emergency Detentions	565***					
Training**	Average of 14.2 days per year per MHO					

*2/2/15 – 7/1/16

**2015

***All MPD Emergency Detentions from 1/1/13 – 9/1/16

Mental Health Officers engage in a number of efforts and initiatives to work with mentally ill individuals in the community. Their focus is to reduce situations requiring repeated police intervention with the mentally ill, and to improve those interactions when they occur. The primary driver of their workload is the number of mentally ill individuals in the community involved in behavior that results in police contact. MPD has started to improve data collection regarding mental health workload, tracking MPD incidents and arrests related to mental health issues. MPD is also currently working with the University of Wisconsin to explore improved tracking and outcome measures.

MHO's also assist with processing emergency detentions when they are able to. While not all emergency detentions are handled by MHO's, they are an indicator of MHO workload. For example, an MHO will often follow-up with subjects who have been placed under emergency detention after the individual has been stabilized and returned to the community. This follow-up can be extensive depending on the needs of the individual.

The number of emergency detentions handled by MPD are increasing. In 2013 MPD performed 141; in 2016 the department is on pace to handle 180. These are also becoming more time-consuming, mainly because the destination facility for most of these is now in Winnebago County. In 2013, less than half of the emergency detentions (65) resulted in a conveyance to Winnebago. In 2015, more than three-

quarters (132) of the emergency detentions did. This has remained consistent during the first eight months of 2016, with three-quarters of the emergency detentions resulting in a conveyance to Winnebago.

Neighborhood Officers

	West	South	Central	East	North	Other**
CAD Incidents*	2,743	2,530	2,652	1,077	1,181	516
CAD Workload*	3,001	2,873	2,149	1,228	975	472
Foot patrol (CAD Incidents)*	151	47	57	27	33	14
Investigative follow up (CAD incidents)*	275	229	81	135	109	64
Miles of roadway	365	108	66	280	144	N/A
Training**	Average of 12.5 days per year per NPO/NRO					

*1/1/14 – 7/1/16

**2015

Measuring neighborhood officer (Neighborhood Police Officer, NPO; and Neighborhood Resource Officer, NRO) workload is also challenging. Some neighborhood officer workload will be captured on the CAD. This will include some work that is core to the NPO/NRO function (foot patrol, community meetings, etc.) but will also include work that is supporting patrol (taking or assisting with response to patrol calls, handling on-sight patrol issues, etc.). Neighborhood officers are not tied to dispatch and the CAD in the way that patrol officers are, and much of what they do will not be tracked on the CAD. Most of the things that drive their workload, like citizen complaints that come directly to an MPD district or neighborhood officer, are also not tracked on the CAD though ultimately some related workload may be captured on the CAD. Parsing apart this information requires manual intervention and would be highly time consuming

Other factors that are unique to an individual neighborhood drive workload for neighborhood officers. For example, most neighborhood officers are assigned to areas comprised primarily of rental properties. Many issues in the neighborhood can be tied to property management practices of those rental properties, and one of the core functions is to work with property owners to improve the area. So a neighborhood officer working an area with a large number of property owners (each owning one or two properties) will generally have more work than one neighborhood officer working an area with a few property owners (one owning multiple properties). Also, an area with more problematic property owners will create more work than an area with responsible property owners. Measuring these factors, however, may not be practical.

Specialty Detective Units

	West	South	Central	East	North	Other**
Reported burglaries*	426	143	277	207	153	
Violent Crimes**	242	110	145	156	138	
Notified offenders in City	110					
Training*	Average of 8.4 days per year per VCU/BCU/SIU member					

*2015

**2015 data; UCR homicide, assault and robbery offenses

Certain aspects of MPD's specialty detective unit workload are easily measured. The Burglary Crime Unit (BCU) is responsible for follow-up investigation on all Madison burglaries, and their primary workload driver is the number of burglaries that occur. The Violent Crime Unit (VCU) has primary responsibility for significant violent crimes, and their primary workload driver is violent crimes, including homicides,

shootings and armed home invasions. As indicated above, however, these figures only tell part of the story. Burglaries, homicides and other crimes vary significantly in their complexity and the degree of investigative follow-up needed. While it is easy to measure the number of these crimes, there are not currently mechanisms to measure the actual amount of work needed for each.

The Special Investigations Unit (SIU) works with repeat offenders in the City that have been identified as committing multiple violent offenses against multiple victims, The offenders are offered support to improve their lives, or strict enforcement/prosecution if they do not. Each of these “notified” offenders requires some degree of monitoring, though the amount of time needed for each will vary (and is not easily measured).

Traffic Enforcement Safety Team (TEST)

	West	South	Central	East	North	Other**
CAD Incidents*	1,995	1,184	1,217	1,279	1,347	563
CAD Workload*	2,784	2,399	2,411	2,590	2,340	895
Traffic Crashes**	6,974	3,566	4,448	4,603	3,109	1,120
Miles of roadway	365	108	66	280	144	N/A
Training***	Average of 14 days per year per TEST member					

*1/1/14 – 7/1/16; TEST officers and sergeant

**1/1/14 – 7/1/16; traffic crash incidents, all MPD units

***2015

With a focus on traffic enforcement and safety, some workload drivers for TEST are easily measurable (miles of roadway, traffic crashes, etc.). Much of TEST’s workload is driven by citizen traffic complaints and driving behavior, which are not as easily measured.

Of the nine functions/units reviewed, each has some data available for monitoring workload; however, that data would be better supported by information not currently captured by current mechanisms in MPD. With adequate data collection, performance objectives can be established. According to the US Department of Justice COPS section, establishing performance objectives is perhaps the most key activity of workload assessments to freeing officers for other duties such as community policing. In particular, determining what fraction of an officer’s shift should be devoted to calls and what should be available for other activities determines how much is available for the discretionary activities of community policing (Wilson, 2012).

A series of qualitative stories to contextualize the workload drivers section are provided in Appendix G.

Comparable Cities Methodology

The Project Objectives and Scope specifies that the Police Staffing Study will “examine policing levels in the City of Madison compared to comparable peer cities.” The project team spent considerable time determining the methodology for selecting the comparables. The selection process began with identifying all U.S. cities with populations between 200,000 and 300,000 as of the 2014 estimate by the United States Census Bureau. This provided a list of fifty-one cities. MPD requested the inclusion of two additional cities for possible comparison outside of this population range. A full list of the cities included in the analysis is list in Appendix H.

The team then moved on to discussing various data points for these cities that would further distinguish them as comparable to Madison. The list below identifies these data points selected for review. Data for all fifty-one cities were collected. Appendix I includes the source of the information.

- 2014 population estimate
- 2010 census population
- Population change 2010 – 2015
- 2014 land area (sq mi)
- County population
- Ratio city population to county population
- State Capital
- University student population
- Ratio University student population to city population
- 2014 poverty rate
- Median household income
- Demographic breakdown
- Age breakdown

Once the above information was tabulated for all fifty-one cities, the data was reviewed in two different ways. First, statistical testing was performed to determine which city characteristics are predictive of crime data. These variables were fit to a model that predicts a city's crime rate with reasonable accuracy given the data collected.

This methodology produced the following list (in alphabetical order):

1. Aurora, Illinois
2. Boise, Idaho
3. Chesapeake, Virginia
4. Greensboro, North Carolina
5. Laredo, Texas
6. Lincoln, Nebraska
7. Lubbock, Texas
8. North Las Vegas, Nevada
9. Orlando, Florida
10. St. Paul, Minnesota

Second, the cities were ranked by each variable to find the ten most comparable cities to each variable. Each team member assigned one point to each instance where the city was deemed comparable and then calculated a total score. Of the maximum score of nineteen, the highest score achieved was ten.

This methodology produced the following list (in ranked order):

1. Lincoln, Nebraska – 10 points
2. Boise, Idaho – 10 points
3. Gilbert, Arizona – 8 points
4. Baton Rouge, Louisiana – 8 points
5. Jersey City, New Jersey – 7 points

6. Irvine, California – 7 points
7. Chandler, Arizona – 6 points
8. Aurora, Illinois – 6 points
9. Plano, Texas – 6 points
10. Chesapeake, Virginia – 6 points
11. Des Moines, Iowa – 6 points
12. Richmond, Virginia – 6 points
13. Syracuse, New York – 6 points

Four cities made both lists:

1. Aurora, Illinois
2. Boise, Idaho
3. Chesapeake, Virginia
4. Lincoln, Nebraska

Three of the four were excluded for issues related to the county/counties within which they reside. Aurora, Illinois is spread across multiple counties, predominantly in Kane and DuPage so it is difficult to contextualize the city's work within a singular county. Chesapeake, Virginia, was eliminated because under Virginia law, all municipalities incorporated as cities are independent cities and are not part of any county. Lincoln, Nebraska was excluded because the city makes up 90.5% of the total county.

The final cities selected were based on a conversation among the staff team informed by the data collected and analyses performed. The cities selected are:

1. Baton Rouge, Louisiana
2. Boise, Idaho
3. Des Moines, Iowa
4. Greensboro, North Carolina
5. St. Paul, Minnesota

Tables J and K include a subset of the nineteen comparable data points reviewed for the selected cities.

Table J.

City	2014 Population Estimate	2010 Census Population	Change	2014 Land Area (sq mi)	City County Ratio	State Capital	Students to City	2014 Poverty Rate	Median HH Income
St. Paul	297,460	285,068	4.41%	52.0	55.9%	Yes	17.2%	17.5%	\$48,259
Greensboro	282,586	269,666	4.79%	126.5	55.2%	No	6.6%	14.6%	\$41,518
Madison	245,691	233,209	5.35%	76.8	47.6%	Yes	17.6%	9.8%	\$53,933
Baton Rouge	228,895	229,493	(0.26%)	76.9	51.3%	Yes	10.2%	16.9%	\$38,790
Boise	216,282	205,671	5.16%	79.4	50.7%	Yes	9.2%	9.6%	\$49,209
Des Moines	209,220	203,433	2.84%	80.9	45.5%	Yes	2.4%	15.1%	\$46,430

**2014 data was the most recent data available at the time of the analysis to select comparable cities*

Table K.

City	Caucasian	AA	Latino	Other	0 – 18	18 – 65	65+
St. Paul	54.8%	15.1%	9.5%	20.6%	25.2%	65.8%	9.0%
Greensboro	45.4%	40.2%	7.4%	7.0%	22.1%	65.7%	12.2%
Madison	75.0%	7.0%	6.6%	11.4%	17.8%	72.2%	10.0%
Baton Rouge	36.6%	54.7%	3.3%	5.4%	21.5%	66.6%	11.9%
Boise	83.6%	1.5%	7.7%	7.2%	22.2%	65.8%	12.0%
Des Moines	68.9%	10.7%	12.3%	8.1%	25.2%	63.9%	10.9%

Comparable Cities Interviews

After the final comparable cities were identified and selected, the next step in the process was to interview staff from the respective agencies. In addition to examining the policing levels of the comparable cities, the overarching theme of the conversations was to examine if the way MPD conducted business was in line with what similar departments across the country were doing in terms of operations, structure, and approaches to staffing levels. Further analysis was done to determine the level of resource allocation to patrol as compared to specialty units. MPD deploys 49% of its resources towards patrol, with the other half dedicated to specialty or support units. With these goals in mind the set of interview questions were developed collaboratively with input from both Finance and MPD staff.

Methodology:

The various police departments were contacted, made aware of the nature of the study, and provided a pre-determined set of interview questions. Following the initial contacts, phone interviews were arranged, with a staff member of both MPD and Finance on the call. The staff from the partner departments included both commissioned officers and civilian support staff. The questions focused on how the various departments were structured, the presence of specialty units, and what if any workload analysis went into staffing decisions.

Department Summaries:

Five comparable police agencies were identified for further study. The following factors were considered as we further reviewed each of these agencies:

- Decentralization Model
- Organizational Structure
- Community Policing Model
- Investigative Model
- Specialty Units
- Percentage of staff assigned to patrol function
- Patrol staffing allocation measurement tools
- Patrol shift work hours schedule

The team interviewed staff from each agency and noted any other factors that were unique to their agency/and their staffing decisions.

Greensboro, North Carolina Police Department

Greensboro, North Carolina has a population of 285,342 and is the third-most populous city in North Carolina. It is the largest city in Guilford County, and is home to the University of North Carolina – Greensboro. The Greensboro Police Department (GPD) has an authorized strength of 673 sworn officers (2.4 per 1,000 residents).

Decentralization – Four District stations and a separate Office of the Chief of Police

Organizational Structure – Four Bureaus each lead by a Deputy Chief. They consist of Patrol, Investigative, Support and Management

Community Policing Model – Ten Neighborhood Officers deployed in storefront offices (primarily in large apartment complexes), three Community Resource Officers, five Community Resource Teams with each team having two Sergeants and between ten and eighteen Officers distributed between five geographic areas

Investigative Model – Investigative units are grouped by crime type. Detective units include Homicide Squad, Robbery Squad, Fraud Squad, Crimes against Persons Unit, Family Victims Unit, Commercial Property Crimes, Residential Property Crimes, Violent Crime Apprehension Team, Gang Intelligence Squad, Narcotics Squad, Tactical Narcotics Teams, and a Vice Squad.

Specialty Units – Traffic Safety Unit, Crash Reconstruction Unit, School Resource Officers, Forensic Services Unit, Property Unit, Crime Analysts, Hazardous Devices Team, Special Response Team, Negotiations Team, Underwater Recovery Team, All-Terrain Vehicle Search/Rescue Team

Percentage of staff assigned to patrol function – 51% of the Greensboro Police commissioned staff are assigned the patrol function

Patrol staffing allocation measurement tools – Greensboro PD uses workload analysis to determine patrol staffing levels. GPD purchased “OPS Force Deploy” software to analyze patrol staffing needs. Greensboro measures workload to determine optimal staffing levels based on time of day and geographical area. Additionally, GPD gathers and analyzes response time data and has staffing goals of responding to Priority 1 calls in seven minutes or less and priority 2 calls in twelve minutes or less (Hunt, 2016).

Patrol shift work hours – Patrol Officers work an overlapping eleven hour shift schedule

The Greensboro Police Department implemented a community policing model that incorporates the community policing philosophy throughout all levels of the department. GPD is in the process of implementing a Neighborhood Oriented Policing plan that was released in April 2014 (Hunt, 2016).

<http://www.greensboro-nc.gov/modules/showdocument.aspx?documentid=24613>

Des Moines, Iowa Police Department

Des Moines, Iowa has a population of 210,330 and is the most populous city in the state of Iowa. It is Iowa's state capital, and home to Drake University. The Des Moines Police Department (DMPD) has an authorized strength of 374 (1.8 per 1,000 residents).

Decentralization Model – One centrally located station with a separate traffic unit facility

Organizational Structure – Three Divisions led by a Deputy Chief or Major consisting of the Operations Division, Investigations Division and Administrative Services Division

Community Policing Model – Ten Neighborhood Officers spread across the city in geographical areas. One Asian Outreach Resource Officer

Investigative Model – The Detective Bureau is centralized and organized by crime type and includes the following sections: Crimes Against Persons, Crimes Against Property, and Family Conflict. There are also investigative resources assigned to Identification (crime scene processing) and Intelligence

Specialty Units – Traffic Unit, Airport Security, Bomb Squad, Canine Unit, Mounted Unit, School Resource Officers

Percentage of staff assigned to patrol function – 50% of DMPD commissioned staff are assigned to the patrol assignment function.

Patrol staffing allocation measurement tools – Des Moines Police determine patrol staffing levels by analyzing call for service data which they refer to as “trip loads”. Des Moines does not currently further analyze the calls for service data into more detailed workload data.

Patrol shift work hours – Three overlapping ten hour patrol shifts

Des Moines is similar to Madison, being a Midwest City that has grown in population approximately 9% over the past 5 years (Norvell, 2016). Des Moines Police Captain Mark Wessels stated that the Des Moines Police Department (DMPD) has been struggling with staffing reductions in recent years due to budget constraints. Since the financial recession in 2008, DMPD has been unable to staff their department at their authorized strength levels. Currently they have an authorized strength of 376 commissioned officers and are staffed approximately twenty-three officers below that. For several years DMPD has had nine officer positions “placed on hold” which effectively reduced their authorized strength. Two officer positions have been returned, changing the positions on hold to seven (Wessels, 2016).

Captain Wessels explained that DMPD has attempted to maintain their patrol division staffing as much as possible, and believes they have been able to maintain their level of service in response to patrol calls. Similar to Madison, DMPD sets minimum staffing levels of patrol officers on each shift and attempts to match staffing with calls for service demands on each shift. The reduction of overall DMPD staff has required DMPD to reduce patrol staffing levels. As an example, the afternoon shift that was

previously staffed at twenty-three officers now has a minimum staffing level of sixteen officers. The minimum is the level that will be maintained using overtime if necessary due to sick leave or other shortages (Wessels, 2016).

In their effort to maintain patrol staffing and emergency services, DMPD reduced the number of officers assigned to specialty units including the Traffic section, Narcotics, and Airport Security. Civilian support positions were also cut due to budget constraints. Captain Wessels advised the budget issues impacted on all area of the department including Criminal Investigations units such as Robbery/Homicide where detectives were finding themselves on call more frequently and were “burning out” based on workload. Patrol officers were impacted as it became more difficult to be granted vacation time off (Wessels, 2016).

St. Paul, Minnesota Police Department

St. Paul, Minnesota has a population of 300,581 and is the second-most populous city in the State of Minnesota. It is Minnesota’s state capital and home to the University of Minnesota Twin Cities. The St. Paul Police Department (SPPD) has an authorized strength of 615 sworn officers (2.0 per 1,000 residents).

Decentralization Model – Three District stations East, Central and West precincts.

Organizational Structure – One Assistant Chief and three Deputy Chiefs with oversight of the following three Divisions: Operations, Major Crimes, and Support Services.

Community Policing Model – The St. Paul Police Department’s ACOP (A Community Outreach Program) program has twelve officers assigned to public housing apartment complexes working out of substations within each complex. These officer positions are funded by the St. Paul Public Housing Agency. The Community Liaison Officer Program is a cadet program for college students age 18-24 to work as liaisons to immigrant communities in St. Paul. Candidates are selected from their respective immigrant communities. There are currently four Community Liaison positions (Somali, Karen and two Asian liaisons). The Liaisons are offered full time Police Officer positions upon successful completion of the four year liaison program assignment. The Community Outreach Program is currently in the planning stage. Twenty officers are anticipated to be assigned to the Community Outreach Unit (Lozoya, 2016).

Investigative Model – Investigative Units are grouped based on crime type. Homicide Unit, Family and Sexual Violence Unit, Gang/Gun Unit, Narcotics/Vice, Youth Services Section, and Crimes Against Property Unit to include Burglary, Fraud and Forgery, Auto Theft, Arson. The detectives assigned to these units are centrally located at the headquarter building. There are two detectives assigned to each of the three Districts stations to follow up primarily on District property crimes.

Specialty Units – Canine Unit, Mounted Unit, Traffic and Accident Investigation Unit, Traffic Enforcement Unit, Special Operations & Mobile Field Forces Unit(Crowd Control), Ordinance Disposal Unit, SWAT.

Percentage of staff assigned to patrol function – 45% of SPPD commissioned staff are assigned to the patrol function.

Patrol staffing allocation measurement tools – Calls for service data and geographical data is used to determine patrol staffing levels.

Patrol shift work hours – Overlapping ten hour work shifts.

The newly formed Community Engagement Unit coordinates a summer Thursday night cookout series at various parks throughout the City. Attendance has been estimated at nearly 2000 attendees building relationships and trust with police (Lozoya, 2016). The St. Paul Police Department regularly hosts several community engagement academies and summits including an East African Women's Summit and an East/West African Youth Summit. With the large influx of Somali immigrants, the department has trained over 600 sworn officers in the Somali culture, started after-school study programs, mentored kids, hosted open gyms and supported female swim and fitness classes. Their programs serve hundreds of Somali American children and teens (Building Community Resilience Minneapolis-St.Paul Pilot Program, 2015).

<https://www.stpaul.gov/news/safe-summer-nights-schedule-2016>

<http://safesummernights.org/>

Boise, Idaho Police Department

Boise, Idaho has a population of 218,281 and is the most populous City in the state of Idaho. It is Idaho's state Capital and home to Boise State University. The Boise Police Department (BPD) has an authorized strength of 280 sworn officers (1.3 per 1,000 residents).

Decentralization Model – Central Police station with a Micro-District Downtown facility similar to the former Madison Police Experimental Police District Station.

Organizational Structure – Two Bureaus consisting of Operations and Support overseen by two Deputy Chiefs.

Community Policing Model – Nine Neighborhood Contact Officers and one Refugee Community Officer.

Investigative Model – Centralized Criminal Investigation Division with the following Investigative units: Narcotics/Vice, Property Crimes, Violent Crimes, Financial Crimes, Special Victims/Crimes Against Children, Criminal Polygraph, Criminal Intelligence, Forensics, Gang Unit.

Specialty Units – Airport, Bar Team, Bike Patrol, Boise Police at Boise State (one Lieutenant and six Officers assigned to a police substation), Bomb Squad, Crime Scene Specialist, one Mental Health Officer, School Resource Officers.

Percentage of staff assigned to patrol function – 56% of the commissioned staff is assigned to patrol.

Patrol staffing allocation measurement tools – An in depth analysis of calls for service data is used to determine patrol staffing levels (Lee, 2016).

Patrol shift work hours – Overlapping ten hour shifts in a four shift model.

Boise Police Lieutenant Brian Lee was interviewed and provided much of the comparison details. When discussing workload drivers Lt. Lee explained that BPD experiences very little gang activity or crimes related to gang activity. When advised that we are experiencing a noticeable increase in gun violence and shots fired calls in Madison, Lt. Lee advised that shots fired is not a call type that they experience in Boise and that gun violence is rare (Lee, 2016).

Baton Rouge, Louisiana Police Department

Baton Rouge, Louisiana has a population of 228,590 and is the second-most populous city in the state of Louisiana. It is Louisiana's state Capital and home to Louisiana State University. The Baton Rouge Police Department (BRPD) has an authorized strength of 749 sworn officers (3.3 per 1,000 residents).

Decentralization Model – Four District Precinct Stations.

Organizational Structure – Four Bureaus consisting of Uniform Patrol Bureau, Criminal Investigations Bureau, Administration Bureau and Operational Services Bureau.

Community Policing Model – Community Resources unit that is responsible for establishing liaison with formal community organizations and community groups.

Investigative Model – Criminal Investigation Bureau with divisions that investigate the crimes by types. Homicide Division, Armed Robbery Division, Juvenile and Sex Crimes Division, Major Assaults Division, Computer Crimes Division, Burglary Division, Auto Theft/Impound Division, Felony Theft Unit, Misdemeanor Investigation Office.

Specialty Units – Air Support, Traffic Division, Traffic Homicide Unit, Hit and Run Division, Housing Authority Unit, Canine, Crime Analysis, Intelligence Division, Explosives and Hazardous Materials Unit, Special Response Team (SWAT), Dive Team/Underwater Investigation, Training.

Percentage of staff assigned to patrol function – 48% of commissioned staff is assigned to patrol.

Patrol staffing allocation measurement tools – Calls for service data is used to determine patrol staffing levels (Coppola, 2016).

Patrol shift work hours – Not Available

The Baton Rouge Police Department is the largest of the comparable cities, and has 48% of the commissioned staff assigned to the patrol function. Baton Rouge has a less formal model of community policing with officers assigned to the Housing Authority Unit working with management and tenants, as well as and two shifts of bike patrol officers assigned in the downtown area. It is difficult to compare

police staffing in Baton Rouge with Madison as Baton Rouge does not use workload analysis when making staffing allocation determinations.

Madison, Wisconsin Police Department

Madison has a population of 248,951 and is the second most-populous city in the State of Wisconsin. It is Wisconsin's state capital and home to the University of Wisconsin. The Madison Police Department has an authorized strength of 461 sworn employees (1.9 per 1,000 residents).

Decentralization Model – Five District Stations with plans to add a sixth district.

Organizational Structure – Three Assistant Chiefs oversee Operations and Support Sections. Operations oversight is currently divided geographically with South and West Districts having one Assistant Chief, and North, East and Central Districts overseen by another Assistant Chief.

Community Policing Model – It is the expectation of the MPD that all of their commissioned personnel incorporate the principals of community policing while performing their duties. In addition, there are eleven Neighborhood Officers working foot and bicycle patrol working out of neighborhood based offices. Five additional Neighborhood Resource Officers (assigned one per District) focus on emerging neighborhoods proactively. Five Community Policing Teams (CPT) assigned to the five patrol Districts. Each CPT has a Sergeant and between five and seven officers.

Investigative Model – Hybrid of two investigative models. Specialty detective units Violent Crime, Burglary, and Special Investigations/Focused deterrence are centralized and work out of headquarters. Each District has between eight and twelve detectives that are assigned the following crime specialties: Persons Crimes, Sensitive Crimes Financial Crimes, and General Assignment.

Specialty Units – Traffic, Canine, Mounted, Mental Health Officers, Gang Unit, Education Resource Officer, Safety Education, Forensic Services, Traffic Specialists, Criminal Intelligence, Crime Prevention, Training

Percentage of staff assigned to patrol function – 49% of commissioned staff are assigned to patrol

Patrol staffing allocation measurement tools – Computer Aided Dispatch (CAD) data is analyzed using the Etico staffing model to measure patrol workload. Workload data is used to determine optimal overall patrol staffing as well as staffing by time of day and geographic distribution.

Patrol shift work hours – 8 hour shifts are used in a 5 shift model to most efficiently attempt to match staffing to workload

The benchmarking method of comparing similar police agencies was used in order to determine how Madison police staffing compares to these other identified similar cities.

All agencies reviewed have similar Organization Structure with Patrol Operations and Support functions. Most agencies further divide the Operations function into a Patrol Bureau and Investigative (Detective) Bureau.

The agencies varied in their decentralization models. The Madison Police Department is most similar to the Greensboro and Baton Rouge Police Departments in their efforts to decentralize operations and station their resources closer to the communities they serve. The St. Paul Police Department has decentralized to three facilities while the Boise and Des Moines Police Departments primarily operate out of one main station.

The Community Policing philosophy is implemented in a variety of ways by each of the comparable agencies. The Madison and Greensboro Police Departments are the most advanced and most similar in terms of Community Policing methods. Both agencies have implemented not only the neighborhood officer concept, but use a team approach to community policing with Community Policing Teams or Community Resource Teams distributed geographically throughout their respective cities. Additionally, both the Madison and Greensboro Police Departments have expectations that all patrol officers will incorporate community policing concepts of proactive policing and problem solving into their daily patrol work. The St. Paul Police Department assigns officers to public housing apartment complexes, but has not expanded the concept to other neighborhoods. SPPD is also in the process of expanding a Community Outreach Unit to increase the number of officers with primary community policing assignments. The Boise and Des Moines Police Departments each commit ten neighborhood officers to larger specific geographic areas throughout their cities. The Baton Rouge Police Department identifies liaison officers to work with community organizations and community groups.

All agencies have specialty team functions to provide additional capability beyond the primarily call driven Patrol function. All the comparable agencies have full time Traffic Units, School Resource Officers, Canine, Forensic Evidence Units and their own Training Sections that conduct recruit academy training. Each agency has some SWAT Team capabilities and most have Crowd Control Team Units. The Des Moines and Boise Police Departments have Airport Security responsibilities. Many of the other agencies have Bomb Squad and Hazardous Materials Units. In Madison, the Airport Security and Bomb Squad functions are performed by the Dane County Sheriff's Office. The Madison Police Department is the only agency that has implemented a Mental Health Officer Unit.

The Madison Police Department Investigative model is unique when compared to the other agencies. The Investigative Detective function was initially decentralized to each of the District stations with each District having detectives assigned case type specialties. The five other agencies reviewed all have a centralized investigative model with teams of detectives assigned by crime type. MPD has recently created several centralized investigative units (Violent Crime Unit, Burglary Crime Unit, and Special Investigations unit) and is in the process of reviewing other centralized investigative units recognizing the advantages of greater team work when conducting investigations. The St. Paul Police Department similarly had a decentralized investigative model in each of their three districts and have returned to the centralized model for efficiency. SPPD does assign two detectives to each of their three District stations for follow up investigative needs.

The agencies reviewed are fairly similar in the percentage of officers assigned to Patrol function compared to the percentage of staff assigned to Investigative functions, Specialty units, and Command/Management staff. The variation was from 45% Patrol assigned in St. Paul to 56% Patrol

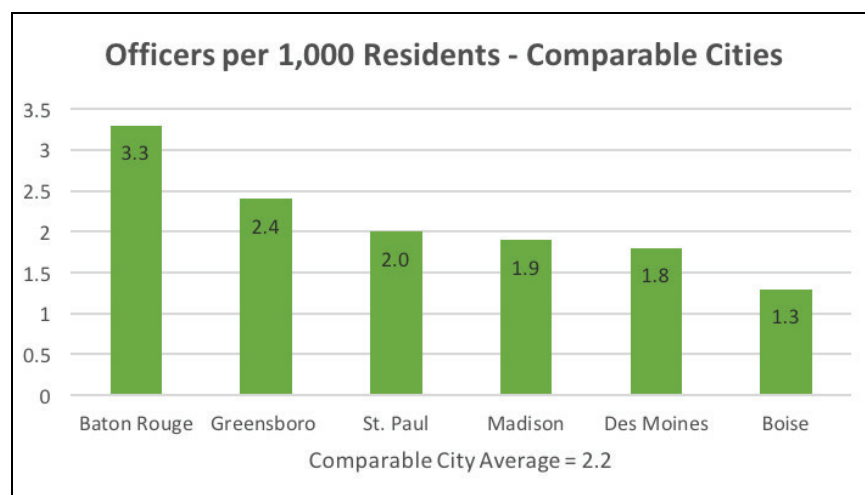
assigned in Boise. Madison, Greensboro, Des Moines, and Baton Rouge were all within the range 49% to 51% of commissioned staff assigned to the Patrol function.

The Madison and Greensboro Police Departments are the only agencies of those identified as comparables to use the preferred workload analysis method to determine optimum police staffing. The St. Paul, Baton Rouge, Des Moines, and Boise Police Departments analyze calls for service data but do not currently further analyze that data into actual officer workload when making their staffing decisions.

As mentioned earlier in this report, the benchmarking method of comparing similar police agencies to draw conclusions on appropriate staffing levels is a relatively inaccurate method. It does allow for further comparison factors and may add some context to the officer to population ratio comparisons. When looking further into the identified similar agencies in terms of their community policing implementation, specialty units, and methods used to determine staffing, Madison appears to be most similar to Greensboro Police and St. Paul Police Departments. Boise, Des Moines and Baton Rouge Police Departments have different workload and calls for service demands. These agencies also have committed fewer resources to the implementation of the Community Policing philosophy.

Conclusions to be drawn from the comparable agency analysis:

- The portion of MPD's sworn staffing dedicated to the patrol function is consistent with other agencies.
- Generally, the comparable agencies have fairly similar specialty work units/functions to MPD. There are some exceptions; notably, MPD is the only agency to have full-time mental health officers.
- MPD is ahead of most of the comparable agencies in integrating workload analysis into the staffing process.
- MPD's sworn staffing is less than the average of the five peer agencies. The average number of sworn officers per 1,000 residents for the five comparable agencies is 2.2. This does not account for the fact that at least one of the comparable agencies has faced recent budget challenges resulting in reduced staffing.



	Boise, ID	Des Moines, IA	Greensboro, NC	St. Paul, MN	Baton Rouge, LA	Madison, WI
2015 Population Estimate	218,281	210,330	285,342	300,581	228,590	248,951
Geographic Area (square miles)	79.4	80.9	126.5	52.0	76.9	76.8
Liquor Licenses (All Classes)	595	523	442	301	973	661
Officer to Population Ratio	1.3	1.8	2.4	2.0	3.3	1.9

Questions		Boise, ID	Des Moines, IA	Greensboro, NC	St. Paul, MN	Baton Rouge, LA	Madison, WI
1	Q1: Has your department conducted its own staffing study, or analyzed staffing needs when planning for the future?	Y	Y	Y	Y	Y	Y
2	What were your departments total operating budget expenditures in 2015?	\$51,200,000	\$62,000,000	\$70,458,078	\$88,068,806	\$86,756,470	\$66,313,359
3	Do you have an organizational chart for the police department?	Y	Y	Y	Y	Y	Y
4	How many employees is your department authorized to have? (Full Time Equivalent)	306	476	785	771	886	576
5	How many officers/commissioned police department employees are there? (Authorized)	280	374	673	615	749	461
	Percentage of Officers assigned to Patrol	56%	50%	51%	45%	50%	49%
7	Does your department have the following specialty units, or something similar? If so how many FTEs reside in each unit?						
	Traffic	11 (2 Sergeants)	17 (6 Civilians)	20	6	44 (Includes Parking)	9
	Community Policing/Neighborhood Officers	10 (2 Sergeants, 2 Retail Theft)	16	75	32	4	47
	Full Time Police in Schools	22 officers, 2 Sergeants	9	20	9	0	8
	Mental Health Unit	1 Civilian Mental Health Professional	1 mental health officer	0	0	0	5
	Domestic Violence Unit	1 Investigator, 6 Violent Crimes Unit	2 Detectives	11	8	0	0
8	How many total calls for service did your department have in 2015?	148,949	182,454	341,634	246,086	215,117	212,376
9	Does your department operate its own dispatch unit?	No (County)	Y (Police and Fire)	Y (With County)	Y (With County)	Y	No
10	Is crime scene processing and forensic computer analysis done by your department? If yes, is it done by civilians or commissioned officers?	Y (Both)	Y (Both)	Y (Civilians)	Y (Both)	Y (Both)	Y (Both)
11	Does your department have a preservice academy? (In house)	Y	Y	Y	Y	Y	Y

Questions		Boise, ID	Des Moines, IA	Greensboro, NC	St. Paul, MN	Baton Rouge, LA	Madison, WI
12	Does your department measure community expectations? For example, do you conduct any of the following?						
	Community survey (scientific?)	Y	Y	Y	Y	Y	Y
	Community meetings	Y	Y	Y	Y	Y	Y
	Committees with Alders	Y	Y	Y	Y	Y	Y
	Forums with the Chief	Y	Y	Y	Y	Y	Y
	Customer Satisfaction surveys	Y	Y	Y	Y	Y	Y

City	State	Population	Sworn Officers	Officers per 1,000 Residents
Madison	Wisconsin	248,951	461	1.9
Largest Wisconsin Cities:				
Kenosha	Wisconsin	100,025	198	2.0
Green Bay	Wisconsin	104,979	190	1.8
Racine	Wisconsin	78,057	197	2.5
Appleton	Wisconsin	73,841	109	1.5
Milwaukee	Wisconsin	600,374	1,890	3.1
Average		191,455	517	2.7
Comparable Peer Cities*:				
Des Moines	Iowa	210,330	374	1.8
Baton Rouge	Louisiana	228,590	749	3.3
Boise	Idaho	218,281	280	1.3
Greensboro	North Carolina	285,342	673	2.4
St. Paul	Minnesota	300,581	615	2.0
Average		248,625	538	2.2
Midwest Cities 200 – 300K Pop*:				
St. Paul	Minnesota	297,640	615	2.1
Cincinnati	Ohio	296,491	961	3.2
Toledo	Ohio	281,150	615	2.2
Lincoln	Nebraska	271,208	320	1.2
Fort Wayne	Indiana	257,172	375	1.5
Des Moines	Iowa	209,220	374	1.8
Average		268,814	543	2

*For cities where 2014 FBI data was unavailable, the most recent year available was used; comparable city staffing data was based on interviews rather than 2014 FBI data.

The above chart illustrates the ratio of total police officers per 1,000 population for the five largest Wisconsin cities, the comparable peer cities reviewed in this study, and Midwest cities with population between 200,000 and 300,000.

Closing

The unique features of Madison create a level of complexity in policing the City compared to other cities similar in size. Selecting benchmark peer agencies to determine appropriate police staffing is not an exact science as there are many variables within the functions of each police agency that make it unique. No single methodology provides a standalone process for determining appropriate police agency staffing levels. Ultimately, a community determines the type and level of policing it receives through the political process which needs to be supported by data and evidence. Population ratios,

comparable cities, workload analysis, and other methodologies all provide context for decision making, where workload analysis is consistently recognized as the most valid technique.

Obtaining context for all sworn staffing levels based on population ratios depends on which group (or group subset) is used for comparison. This is complicated by Madison's population (248,951) being right on the cusp of moving from FBI Group II to Group I. Madison is currently a Group II city, and as a result could be viewed as having an officer to population ratio that is greater than the average staffing level in comparison to other Group II cities. However, Madison's population will reach 250,000 in the near future, making Group I a seemingly more relevant comparison. Group I cities include all US cities over 250,000 but can be broken down into group subsets. While there is not clear consensus on whether Group I, Group II or some subset of either is the most relevant current comparison, Madison's population will put the city in Group I soon. According to the FBI data, Madison's officer to population ratio is less than the average staffing level in comparison to Group I cities.

The results from the comparable cities section of this report are based on the sample size of five cities. Compared to the five comparable cities in review, Madison's officer to population ratio is less than the average. Based on data collected, the portion of sworn officers dedicated to the patrol function is consistent with the other five agencies. Madison is fairly similar in its provision of services through proactive specialty work units/functions compared to these five other cities, with mental health officers being the notable exception setting the city ahead of its peers. MPD is also ahead of most of the comparable agencies in using workload analysis in the staffing process.

MPD has been performing workload analysis for patrol since the last staffing study in 2008. The associated staffing decisions include the overall number of officers to be assigned to the patrol function as well as how they should be assigned by geographic area and time of day to best match the resources (officers) to the workload. The 2015 workload analysis based on the 2008 Etico study shows that MPD's patrol function needs thirteen more officers to meet workload demands based on the following analysis components: total patrol workload, officer leave time, and the balance between proactive and reactive work.

Similar to cities across the country, MPD does not have comprehensive workload data for non-patrol units/functions. Success is most often documented by anecdotal evidence and the use of other measures such as citizen surveys of perceptions of crime and safety as well as customer satisfaction surveys. This report looked at a single data point for each functional unit for the most recent year, which does not give adequate information about the level of workload over time for non patrol functions.

Regardless of the staffing levels, MPD continues to emphasize proactive policing, problem solving, and community engagement through a decentralized five district model with a sixth district in the development phase. As this report was developed, expansion of proactive service delivery continued with the creation of a new unit (CORE) which emphasizes interaction between MPD and the middle school population, a gap previously identified by the Department. This unit will be staffed with five officers and one sergeant as of 2017, supported through a newly awarded COPS grant.

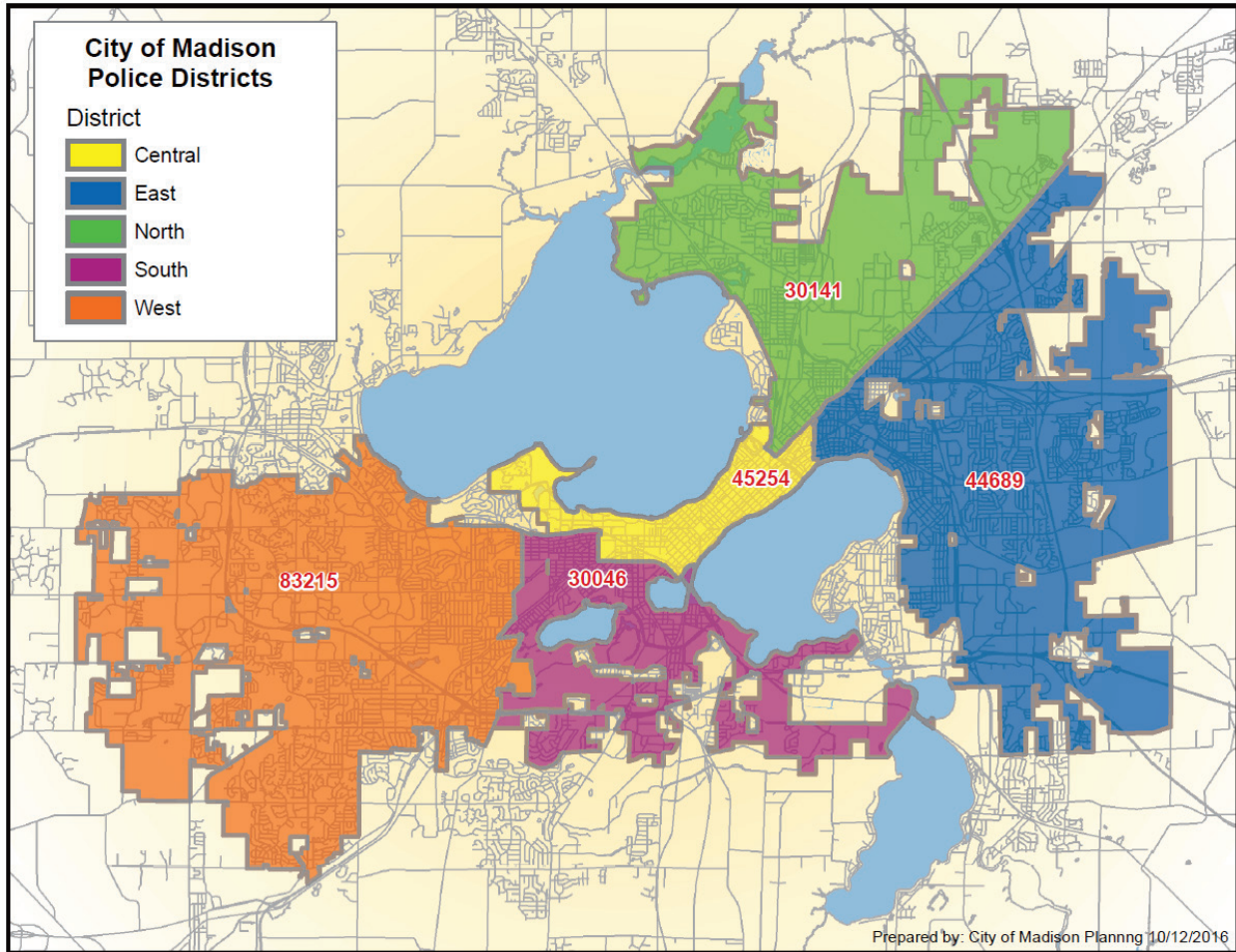
Beyond population ratios and workload measurement to dictate staffing, Madison police recognize their broader role as part of a municipal government working to strengthen urban life and improve upward mobility for all residents of the City of Madison.

Future Staffing Studies:

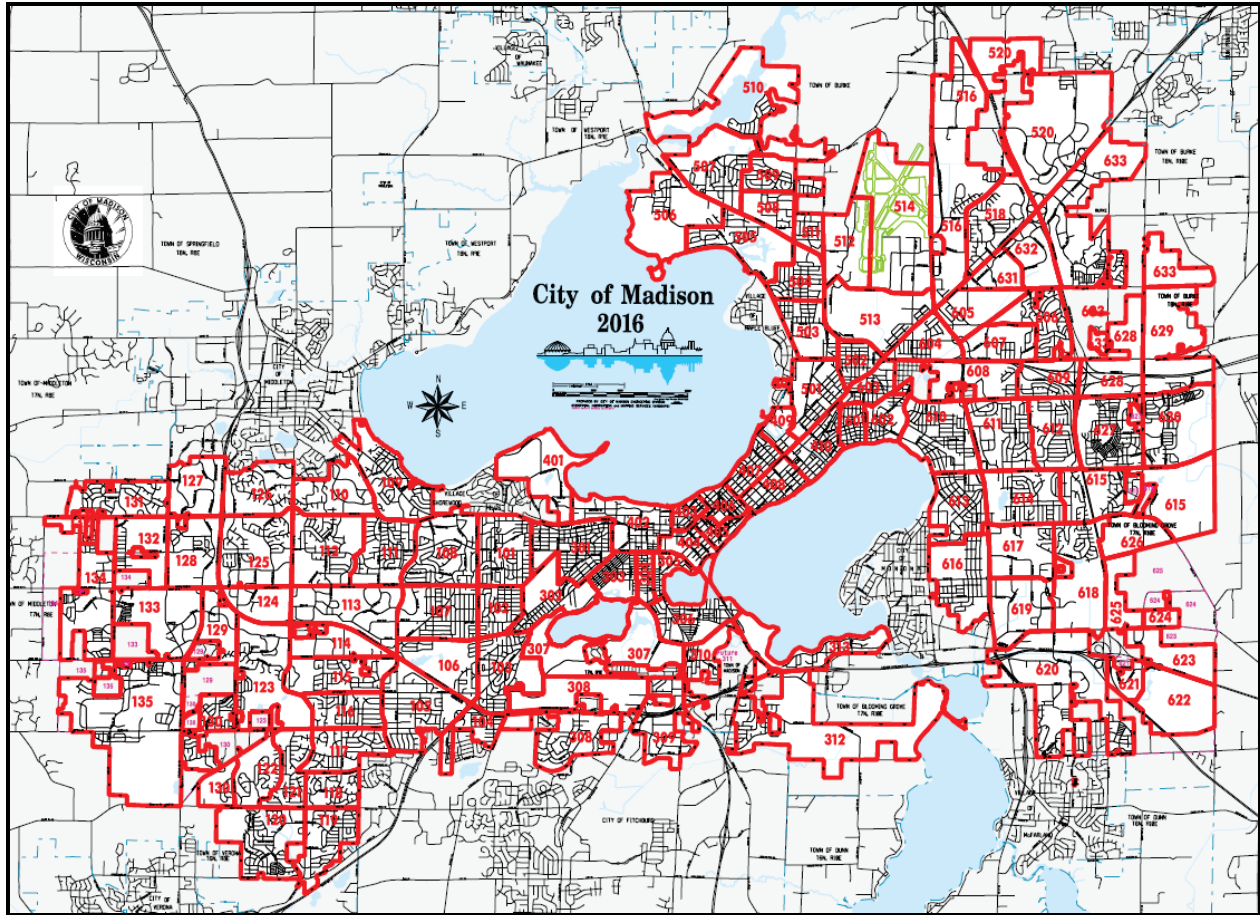
With the conclusion of the 2016 police staffing study, the following areas are recommended for possible future research: (1) a review of the community survey to align with surveying best practices (2) a review of the racial equity components of police staffing, including but not limited to interpretation needs and seniority ranking of women and minorities; (3) a review of CAD workload data over time for non patrol functions that demonstrates trends over time; (4) development of performance measures for non-patrol functions to support the CAD workload trends over time; (5) and development of meaningful outcomes for the Madison Police Department that tie into a strategic framework of citywide goals.

Appendices

Appendix A. MPD District Map



Appendix B. MPD Sector Map



Appendix C. City Full-time Equivalent Staff by Agency 1994 & 2016

Agency	1994	2016	Change
Attorney	22.00	26.50	20.45%
Building Inspection	49.80	48.00	-3.61%
CDA Housing Operations	52.50	40.50	-22.86%
CDA Redevelopment	-	2.00	
Civic Center	22.70	-	
Civil Rights	-	15.90	-3.64%
Affirmative Action	7.50		
Equal Employment Opportunities	9.00		
Common Council	1.00	2.00	100.00%
Community Development Division*	22.80	38.50	68.86%
Economic Development Division*	13.00	16.00	23.08%
Engineering	82.00	159.60	94.63%
Finance Department	40.00	41.75	4.38%
Fire Department	297.50	393.00	32.10%
Fleet Service	42.00	43.00	2.38%
Golf Courses	14.00	8.00	-42.86%
Human Resources Department	25.00	16.00	-24.00%
Employee Assistance Program		3.00	
Ice Arenas	3.00	-	100.00%
Information Technology Department	37.70	53.15	30.59%
Citicable	3.00		
Library	102.80	130.65	27.09%
Mayor	10.00	12.00	20.00%
Metro Transit	359.00	473.60	31.92%
Monona Terrace	-	55.25	
Municipal Court	5.80	5.00	-13.79%
Parking Utility	47.50	68.80	44.84%
Parks Division***	141.30	164.75	16.60%
PCED Office of the Director	8.60	7.75	-9.88%
Planning Division	17.20	31.50	83.14%
Police Department	386.90	575.80	48.82%
Public Health Madison Dane County**	129.00	137.55	6.63%
Public Works, Department of	2.00	-	100.00%
Revenue, Department of	39.00		-3.85%
Assessor		24.00	
Clerk		7.50	
Treasurer		6.00	
Streets Division***	177.00	180.00	1.69%
Traffic Engineering Division	53.50	63.25	18.22%
Transportation, Department of	5.00	-	100.00%
Water Utility	121.30	130.00	7.17%
TOTAL City of Madison FTE	2,350.40	2,980.30	26.80%
TOTAL City of Madison Population	204,687	248,951^	21.63%

*In 1994, the Community Development Division and the Economic Division were combined as the Community & Economic Development Division. In 2008, the divisions were separated. The FTEs for the Community Development Division include Community Development Block Grant FTEs.

** In 1994, both the city and the county had Public Health Departments. The departments were combined December 31, 2007. The number of FTEs for PHMDC in 1994 is the total of city and county employees.

***The FTEs in 2016 do not include FTEs added for the management of the Emerald Ash Borer infestation. As the number of ash trees remaining to be removed decreases, the FTEs added for this purpose will be reduced through attrition.

^Population is 2015 Figure

Appendix D. Complete List of 2016 MPD Positions

2016 Authorized Strength

- Commissioned = 461
- Civilian = 114.8 FTE's (116 people either permanent full-time or permanent part-time)

Commissioned:

Chief	1	
Assistant Chiefs	3	
Captains	10	5 – District Captains 1 – Training 1 – Traffic & Specialized Services 1 – Centralized Patrol Services 1 – Investigative Services 1 – Community Outreach
Lieutenants	23	3 – Officer in Charge 5 – District Patrol 5 – District Investigations 2 – Field 1 – Training 1 – Traffic & Centralized Services 1 – Forensics 1 – Investigative Services 1 – Task Force 1 – PS&IA 1 – Personnel 1 – Open Records
Sergeants	47	29 – Patrol 5 – Community Policing Team 3 – Training 2 – Detective Sergeant (Violent Crime Unit & Burglary Crime Unit) 1 – Gang Unit 1 – Dane County Narcotics Task Force 1 – Professional Standards & Internal Affairs 1 – K9 Unit 1 – Traffic Enforcement and Safety Team (TEST) 1 – Criminal Intelligence Section (CIS) 2 – Community Outreach & Use of Force
Detectives	68	45 – District assigned 6 – Violent Crime Unit (VCU) 5 – Burglary Crime Unit (BCU) 4 – Criminal Intake Unit (CIU) 4 – Dane County Narcotics Task Force 4 – Special Investigations Unit (SIU)
Investigators	13	13 - Forensics

Police Officers	296	<p>196 – Patrol</p> <p><u>100 – Non-patrol:</u></p> <p>26 – Community Policing Teams</p> <p>11 – Neighborhood Officers</p> <p>8 – Traffic Enforcement & Safety Team (TEST)</p> <p>7 – K9 Unit</p> <p>7 – Training</p> <p>5 – Neighborhood Resource Officers</p> <p>5 – Mental Health Officers</p> <p>5 – Gang Unit</p> <p>5 – Community Outreach</p> <p>4 – Educational Resource Officers</p> <p>4 – Dane County Narcotics Task Force</p> <p>4 – Safety Education</p> <p>3 – Criminal Intelligence Section</p> <p>2 – Mounted Patrol</p> <p>2 – Traffic Crash Specialists</p> <p>1 – Crime Prevention</p> <p>1 – Special Investigations Unit</p>
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Civilian:

Managers	2	<p>1 – Records Section & Technology Manager</p> <p>1 – Finance Manager</p>
Coordinators	1	1 - Information Management & Technology Coordinator
Supervisors	7.7	<p>1 – Property Room Supervisor</p> <p>1 – Parking Enforcement Supervisor</p> <p>1 – Court Services Supervisor</p> <p>1 – Records Supervisor</p> <p>1 – Police Report Supervisor</p> <p>1 – Parking Field Supervisor</p> <p>1.7 – Crossing Guard Supervisors</p>
Leadworkers	2	<p>1 – Parking Enforcement Leadworker</p> <p>1 – Police Report Typist Leadworker</p>
Professional Staff/Non-Reps	12	<p>1 – Public Information Specialist</p> <p>1 – Accountant 2</p> <p>4 – Crime Analysts</p> <p>1 – Grants Administrator</p> <p>4 – Management Information Specialist 2</p> <p>1 – Administrative Assistant</p>
Clerical Staff	55.1	<p>1 – Account Tech 2</p> <p>6 – Program Assistants (2 Finance; 1 Scheduler; 1 Investigative Services; 1 Training; 1 Open Records)</p> <p>5.6 – Admin Clerk 1 (1 Executive; 1 Finance; 2 Records; 1 Court Services; .6 Training)</p> <p>9 – Record Services Clerks (Court Services)</p> <p>20.5 – Police Report Typists</p> <p>13 – Clerk Typists (Records)</p>
Field Staff	35	<p>1 – Forensic Lab Tech</p> <p>28 – Parking Enforcement Officers</p> <p>1 – Auto Service Worker</p> <p>5 – Property Clerks</p>

Appendix E. Overview of Remaining MPD units/functions

Centralized Services

Forensic Services – FSU is responsible for crime scene processing, evidence collection & processing, fingerprint comparison, forensic computer analysis, accident reconstruction, and many other types of forensic work. It is staffed by one lieutenant, thirteen investigators and one civilian lab technician.

Property – responsible for intake, storage, tracking and disposition of all property collected or turned in to MPD. Staffed by one civilian supervisor, five civilian property clerks and one civilian bicycle recovery specialist.

Dane County Narcotics Task Force – DCNTF is a multi-jurisdictional unit focusing on middle to upper level drug dealers and their organizations. MPD provides one lieutenant, one sergeant, four detectives and four police officers to the unit.

Criminal Intake Unit – CIU is responsible for detective court activity and processing criminal complaints for arrests made by operations personnel. It is staffed by four MPD detectives.

Pawn Program – one civilian employee who monitors pawn transactions to identify stolen property, trends, suspects, etc.

Criminal Intelligence Section – CIS is responsible for the analysis and dissemination of crime information. Staffed by one sergeant and three officers.

Crime Analysis Unit – CAU provides information regarding crime trends designed to assist in short and long term strategies. Staffed by three civilian crime analysts.

Traffic Crash Investigation Specialists – handles follow-up on fatality and serious injury accidents. Staffed by two officers.

Parking Enforcement – primary responsibility for parking enforcement. Staffed by two civilian supervisors, one leadworker and twenty-eight parking enforcement officers (PEO's).

Crossing Guards – two civilian supervisors oversee fifty-seven hourly crossing guards.

K9 – MPD's K9 unit is staffed by one sergeant and seven officers.

Mounted Patrol – MPD's Mounted Patrol is staffed by two full-time officers (supplemented by part-time riders with other primary assignments).

Crime prevention – crimestoppers – one MPD officer coordinates MPD's crime prevention efforts and the Madison area crimestoppers program.

Community Outreach and Resource Education – CORE is a new unit forming in 2016 that will work to improve relations between MPD and the community. By 2017, it will be staffed by one sergeant and five officers.

Training – Responsible for recruitment, selection, hiring and training of new officers. Also responsible for continuing training of existing officers, administering the MPD promotional process, managing MPD’s training facility and offering external trainings. Safety Education officers also are responsible for providing classes on personal safety to elementary school students throughout Madison. Staffed by one Captain, one Lieutenant, three sergeants, ten officers and two civilians.

Police Report Typist Unit – Provides 24/7 administrative support to several MPD work units and responsible for transcription/processing of all MPD dictated reports. Staffed by one civilian supervisor, one civilian leadworker and fifteen police report typists.

Court Services – processes all municipal court case processing. Staffed by one civilian supervisor, one administrative clerk and eight records clerks.

Records – indexing police reports, making computer entries, processing open records requests, conducting background checks, fingerprinting, etc. Staffed by one civilian supervisor, two administrative clerks and thirteen clerk typists.

Information Management & Technology – responsible for operational support and strategic planning for departmental technology. Staffed by four management information specialists and one crime analyst.

Other Functions:

- Public information
- Professional Standards & Internal Affairs
- Purchasing & Finance
- Fleet management

Also – many MPD employees have other team responsibilities (SWAT, Honor Guard, Special Events Team, etc.) in addition to their primary assignments. These functions are critical to the MPD mission, but these collateral duty assignments have an impact on MPD staffing. Officers assigned to these teams require work time (training, administrative tasks, operations, etc.) that take them away from their full-time assignments, and this must be considered in MPD’s overall staffing picture.

Appendix F. Examples of Events Requiring MPD Planning & Staffing

- Mifflin Street/Spring Student Party
- Shake the Lake
- Ride the Drive
- Freakfest
- Crazylegs
- Syttende Main
- Madison Half Marathon
- Art Fair on the Square
- Opera in the Park
- Senior PGA Tour Event
- Ironman
- Taste of Madison
- UW Football game days
- Protests/demonstrations
- Dignitary protection (Dalai Lama, presidential and vice-presidential candidates)

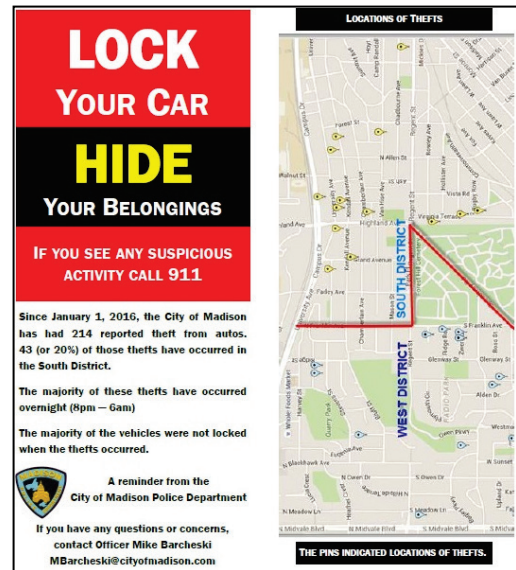
Appendix G. Qualitative Workload Stories

Community Policing Teams

Community Policing Teams consist of five or more Officers and a Sergeant and are assigned to each District as an immediate problem solving response for issues identified by the community. They primarily focus on community engagement, traffic issues and response to neighborhood drug trafficking complaints.

South District

Examples of proactive, problem solving efforts by South District Community Policing Team (S-CPT) include a proactive crime prevention and community outreach effort in response to an increase in thefts from autos, a targeted drug enforcement effort following numerous neighborhood complaints, and a long-term neighborhood assessment and analysis project in the Moorland Road Neighborhood. During the first quarter of 2016, the Regent Street Neighborhood and Vilas Neighborhood experienced a dramatic increase in thefts from autos. After analyzing incident data, the South CPT worked with the Burglary Crime Unit and an MPD Crime Analyst to determine where, when and how the crimes were occurring. It was found that the majority of crimes involved unlocked vehicles at night. Officers from the South CPT created a theft prevention flyer which encouraged vehicle owners to lock their vehicles and hide their belongings. The flyer also included a map which showed where the thefts had recently occurred. These flyers were distributed to over 500 parked vehicles and contacted residents by the South CPT. In addition to the prevention work, the team also scheduled surveillance and enforcement in the neighborhoods affected. A drop in theft from autos was realized in these neighborhoods after the South CPT initiative took place.



Early in the spring of 2016, the South District received a number of complaints from residents and from the Alder about drug use and other issues in and around their homes. Residents informed the Alder and police that not only were students or student-age youth not respectful of private property, but that they were also observing drug deals taking place in open air. The South District Community Policing Team (SCPT), along with the support of the West High School Educational Resource Officer (ERO) and West High School staff, worked in the Regent Neighborhood adjacent to West High School during lunch hours. During a week-long lunchtime project, officers contacted eight different individuals involved in possessing or smoking marijuana. Members of the South CPT also arrested one seventeen-year old for possession with the intent to deliver THC less than 1000' from a school and possession of drug paraphernalia. The ERO shared relevant information that the South CPT gathered to pursue necessary investigations inside the school. Students contacted towards the end of the week long project stated that word was getting around the school that officers were in the area working on enforcing drug laws. The South CPT also worked in the area of the Allen House and nearby homes where youth were suspected of stealing packages from residents' front doors. The week was productive and citizen complaints decreased significantly following this effort.

Throughout the summer of 2016, the South District CPT worked with residents and stakeholders of the Moorland Road Neighborhood to complete a needs assessment of the area. This neighborhood has been without an organized association for years and has a unique mix of 30-year residents in single family homes and residents in rental units of duplexes and large apartment complexes. Communication within between neighbors and between neighbors and police needs to improve and this assessment intends to serve as a catalyst for improvement. The South CPT organized a police and citizen work group (consisting of residents and neighborhood stakeholders) which consists of approximately 15-20 residents and other neighborhood stakeholders who meet regularly to analyze police incident data, discuss perceptions on safety and review qualitative data. The South CPT worked with MPD interns and completed a qualitative survey of over 200 homes in the neighborhood. This process improved communications between neighbors and with police and has exposed a need for additional outreach efforts. As a result, the South CPT held regular chat with a cop sessions, game nights in the Seven Oaks Apartments and held a bike rodeo targeting Latino residents.

West District

The West CPT worked with City Engineering and the Alder to improve street lighting in the 5800 Block of Balsam Rd. Lighting was extremely poor and improved lighting can improve safety/security in the area.

The West CPT responded to complaints of open air drug dealing at several businesses including the BP gas station on Verona Rd and in the parking lots of the Meadowood Shopping Center on Raymond Rd. Information was received that young men were displaying handguns in the area of the BP in an attempt to intimidate others. Through surveillance in the area a subject was arrested in possession of a stolen handgun. Using surveillance and contacts there have been several arrests for drug trafficking and other weapons offense. Surveillance at the Walgreens on Raymond Rd revealed a retail theft scam in which heroin addicts were digging receipts out of the trash, stealing similar items at other Walgreens, then returning the items with the receipt to the Raymond Rd Walgreens for cash that was used for heroin purchases. West CPT members alerted Walgreens management to the fraud and steps were taken to alert other stores and eliminate the illegal returns at the Raymond Rd store.

An inordinate number of repeat calls for service were identified at the Waterleaf Apartment complex on Schroeder Rd. West CPT members established a working relationship with the apartment complex management to identify on-going criminal activity on the property. Several property repairs and quality of life improvements were made. There was a reduction in calls for service to the complex during the summer months of 2016 compared to the previous year.

A trend of youth and young adults stealing cars was identified. Through analysis several possible suspects were identified. During a late night surveillance operation, plain clothes CPT Officers observed several armed individuals approach a residence on foot and shoot multiple handgun rounds into a house. The suspects fled the area in a nearby vehicle that was then pursued by other CPT Officers. After a lengthy vehicle pursuit across the west side of the City, three individuals were taken into custody and two stolen handguns were recovered.

Central District

Analysis of disturbances and arrests in the State Street area showed many of those arrested were involved in multiple offenses throughout the State Street area. A plan was developed to work with the District Attorney's Office and Probation agents to have offenders that are repeatedly arrested banned from certain geographic locations in the downtown State Street area. The geographic restriction is placed using conditions of bail as well as conditions of probation.

Upper State Street has been a gathering place for homeless and transients engaged in illegal behaviors including fights, disturbances, and numerous drug and alcohol offenses. Central CPT members have increased their presence in this area working with the Downtown Business Association and store owners to repurpose the area with specific planned events. Officers are working to establish community expectations and enforcement of ordinances prohibiting illegal behavior.

Each fall the Langdon Street Neighborhood Police Officer meets with each fraternity and sorority and presents a crime prevention program, which includes a discussion of expectations on weekend events. The Langdon Neighborhood Officer works proactively with UWPD and the UW Dean's office on behavior issues to prevent repeat calls for service.

East District

Received a complaint from management regarding drug activity on their business premises by employees. Worked with management to identify employees suspected of being involved, drafted a search warrant for a vehicle and conducted a canine sniff of employee parking lot.

Received numerous complaints about several massage parlors in the East District engaging in acts of prostitution. Conducted surveillance and made contact with patrons then met with a city attorney before making contact with two parlors to inquire about any licenses they hold. One parlor decided to close and the other's lease was voided.

Discarded Syringes project: Project in conjunction with city agencies and community groups regarding discarded syringes in the community based on project in Alberta, Canada

Worked with the management of an eastside motel with a high volume of calls for service for drug activity, disturbances and drug overdoses to identify and modify business practices that are contributing to the high level of police calls for service. Management has posted the property for no trespassing, implemented a parking permit system, changed locks to exterior doors, improved lighting and installed cameras.

Worked with management of an east side gas station and law enforcement partners to identify and modify business practices that are contributing to the high level of police calls for service. Proactive enforcement of drug and trespassing violations have led to the city of Madison filing a drug nuisance abatement against this business.

Received credible information of a felon in possession of a firearm engaged in criminal activity living on the east side of Madison. Worked with outside agencies and dedicated resources into indentifying vehicles, people and addresses associated with this individual. Logged hours on surveillance of suspect and conducted a traffic stop to positively identify suspect and his address.

North District

Neighbors and repeat call for service report brought a residential property to the attention of the North District. Problems were drunkenness, noise, drug trafficking, building code violations and - most significantly – a midday shots fired call. Police met with neighbors, tenants and property owner to create a problem solving plan. The property owner had not been aware of significant problems. Ultimately house was vacated and secured by property owner.

A north side residence identified as problematic was occupied by an opiate addict. The home is owned by the young man's parents. Neighbors and repeat call for service report brought this property to the attention of the North District. Problems included multiple heroin overdoses, drug trafficking, fights, noise, domestics, damage to property. Police met formally and informally with the property owner, neighbors and tenant to create a problem solving plan. Chronic nuisance notification was made to property owner. Communication with tenant and his parents was maintained throughout this process. Ultimately house was vacated and owner has plans to raze and rebuild. Tenant is currently in drug court and long term rehabilitation.

Fifth detail patrol officers identified a problem apartment in a North District neighborhood. The North CPT worked with management to meet with the leaseholder and come up with specific rules the tenants would have to abide by. The hope was to keep the tenant in the community and work with the family unit to deal with AODA issues and enhance quality of life for others around this family, rather than moving straight to eviction and/or law enforcement actions.

There are numerous address specific problem solving efforts by each District CPT in response to drug activity or other nuisance behavior. Here are some examples of community engagement activities:

- Mendota Community School steering committee.
- Fireside Five-Oh Living Room Conversations.
- Guerrilla Grillers
- Vera Court Community Gardens
- Warner Park Bike Rodeo
- Vera Court, Ridgcrest, Straubel/Truax community picnics
- Coffee With a Cop
- MSCR Read Up!
- Project Giving Hope
- Read your heart out
- Fridays at the Y
- MSCR "Superhero Training Camp
- Bike patrols
- "Buddy Ball" program
- Reach a Child
- Neighborhood associations' meetings, picnics/block parties
- MPD Black Youth Academy
- MPD Latino Youth Academy
- Worked with a local Wisconsin bike corporation to test and evaluate a prototype police bike
- Foot patrols aimed a community engagement
- Hmong Language and Culture Enrichment Program"
- Assisted Training Team with UW Criminal Justice Field Trip experiences
- Stuff the squad event (food charity)

Neighborhood Resource Officers – February, 2016 Chief's Blog

The Madison Police Department has long enjoyed a reputation as a national leader in progressive policing with an emphasis on problem solving and community engagement. Nowhere is this more pronounced than in the vibrant relationship building that is taking place in a number of neighborhoods throughout our City.

Neighborhood officers, unlike those assigned to patrol services, are not call-driven. As a result, officers like me who are assigned to a cluster of neighborhoods are not seen only when there is a sense of urgency and/or crisis. We can be proactive, collaborative, and creative in teaming up with constituents to face a host of issues beyond the traditional definition of law enforcement.

As neighborhood officers, we provide mentoring, assist in addressing quality of life issues, stage community building events, and can access city services in a more streamlined capacity to meet the needs of our neighbors. Our mission as neighborhood officers is similar to that of "social workers with a badge" as our Chief likes to say.

When neighborhood police officers become a thread in the fabric of the community, their sense of dedication to building a vital, cohesive community increases many times over. Problem solving begins to happen when a community and its neighborhood police partners recognize the vested interest that they each share in the neighborhood.

Regrettably, owing to a combination of factors which drive resource allocation, our presence in the neighborhoods had diminished to some extent over the years. At its peak in 2002, the Madison Police Department had assigned 15 officers as full time neighborhood police officers. By 2014, we ended the year with only 10 full time neighborhood officers.

When Chief Koval took office in April of 2014, he first surveyed the command staff of our five districts in assessing the quality of life issues of Madison's various neighborhoods. Each of the district captains cited numerous instances of neighborhoods that were beginning to demonstrate telltale signs of dysfunction and increased calls for service. As Chief Koval has often stated at community forums, one of the litmus tests he applies in forecasting the future of Madison as it relates to crime, lies in analyzing the health and wellness of our various neighborhoods. So it came as no surprise when the focal point of Chief Koval's first budget process was to reestablish a greater presence in our neighborhoods. Thanks to the support of citizens and city leaders, we have been able to reinvigorate our cadre of neighborhood officers. Officially known as Neighborhood Resource Officers (NRO), in 2015 the department added five NROs, one in each policing district, to the duties of neighborhood policing.

We have just completed our first year of the NRO program. Each of our district commanders have reported to the chief's office on the work of the NROs. These five reports are especially interesting in that they show us that the work of the NROs is as varied as the police districts in which they serve. NROs are tasked to deal with the unique challenges specific to each district that best fits their needs.

Some examples of problem solving and community building over the past year are:

- Landlord/tenant training and relationship building
- Neighborhood Resource Team membership
- Middle and elementary school Lunch-With-a-Cop program
- Community Restorative Court support
- Community garden development
- Support for merchants' association
- Teen girl's empowerment initiative
- Attention to chronic nuisance properties

There are many, many more examples of strong, healthy connections made with our neighborhoods. The common element in each of these ventures is the consistent personal presence and accessibility of these officers to residents and other community partners. It should be noted that there is a competitive process for officers to obtain an NRO position. The expectation of the Chief is that we make a multi-year commitment and will flex our hours and days to best meet the needs of our neighborhoods. For all intent and purposes, our overriding mission is to build relationships and to become known as the face of the MPD beyond the badge.

We know that our work will likely always be driven by the necessity to respond to 911 calls. Our patrol officers are second to none in responding to those calls. On the other hand, the neighborhood officer and neighborhood resource officer programs, by the nature of their flexibility and investment of time to the community, have the ability to reduce overall calls for service, the opportunity to provide support to citizens after a 911 event and a dedication to help increase a sense of community safety in their neighborhoods. We are very pleased with the first year accomplishments of our NROs and look forward to many more successes to come.

Appendix H. Cities Analyzed as Comparables

1. Aurora, Illinois
2. Baton Rouge, Louisiana
3. Birmingham, Alabama
4. Boise, Idaho
5. Buffalo, New York
6. Chandler, Arizona
7. Chesapeake, Virginia
8. Chula Vista, California
9. Cincinnati, Ohio
10. Columbus, Georgia
11. Des Moines, Iowa
12. Durham, North Carolina
13. Fayetteville, North Carolina
14. Fontana, California
15. Fort Wayne, Indiana
16. Fremont, California
17. Garland, Texas
18. Gilbert, Arizona
19. Glendale, Arizona
20. Glendale, California
21. Greensboro, North Carolina
22. Henderson, Nevada
23. Hialeah, Florida
24. Huntington Beach, California
25. Irvine, California
26. Irving, Texas
27. Jersey City, New Jersey
28. Laredo, Texas
29. Lincoln, Nebraska
30. Lubbock, Texas
31. Modesto, California
32. Montgomery, Alabama
33. Moreno Valley, California
34. Newark, New Jersey
35. Norfolk, Virginia
36. North Las Vegas, Nevada
37. Orlando, Florida
38. Oxnard, California
39. Plano, Texas
40. Reno, Nevada
41. Richmond, Virginia
42. Rochester, New York
43. Saint Paul, Minnesota
44. San Bernardino, California
45. Scottsdale, Arizona
46. Spokane, Washington
47. St. Petersburg, Florida
48. Tacoma, Washington
49. Toledo, Ohio
50. Winston-Salem, North Carolina
51. Yonkers, New York

Appendix I. Comparable Cities Method 2 Sources

#	Variable	Source	Notes
1	2014 Population Estimates	Wikipedia – ACS	
2	2010 Census Population	Wikipedia – Census	
3	Population Change	Wikipedia	
4	2014 Land Area (sq mi)	Wikipedia	
5	2010 Population Density per sq mi	Wikipedia	
6	% City to County	Calculation: 2014 Population Estimate	
7	State Capitol	Internet Search	There are only eight state capitols in this sample. Seven comparables received one point.
8	University Population	Internet Search	University Population is limited to the single largest school found via Google search; Madison has the third largest University Population in the dataset. Seven comparables received one point.
9	% Students to City	Internet Search	Madison has the highest share of % Students to City. Five comparables received one point.
10	Poverty Rate 2014	ACS 2014	
11	Total Violent Crime Rate	2014 FBI UCR	
12	Total Property Crime	2014 FBI UCR	
13	Total Crime Rate	2014 FBI UCR	
14	Median Household Income	American Fact Finder	
15	Unemployment Rate	American Fact Finder	Madison has the lowest unemployment rate of the dataset. Five comparables received one point. Columbus, Georgia did not have unemployment listed.
16	Caucasian	American Fact Finder	Madison has the fifth highest concentration of Caucasians. Nine comparables received one point.
17	African American	American Fact Finder	
18	Latino	American Fact Finder	
19	Other	American Fact Finder	
20	Male	American Fact Finder	Six comparables selected as to not over value this (three above, three below).
21	Female	American Fact Finder	Six comparables selected as to not over value this (three above, three below).
22	18+	American Fact Finder	Madison has the second highest concentration of 18+. Six comparables received on point.
23	65+	American Fact Finder	
24	18-65	American Fact Finder	Madison has the highest concentration of 18-65. Five comparables received one point.
25	0-18	American Fact Finder	Madison has the second lowest concentration of 0-18. Six comparables received one point.

Notes on FBI Population Data

- 2014 FBI data was used unless otherwise noted. This was the most current data available at the time the project started.
- There are seventy-two cities in Group I, ranging in population from St. Petersburg, Florida to New York City.
- There are eleven cities in the Group I 1,000,000 and up subgroup, ranging in population from San Jose, California to New York City.
- There are twenty-two cities in the Group I 500,000 – 999,999 subgroup, ranging in population from Fresno, California to Honolulu, Hawaii.
- There are thirty-nine cities in the Group I 250,000 – 499,999 subgroup, ranging in population from St. Petersburg, FL to Sacramento, CA.
- There are fourteen cities in the Group I Midwest region, ranging in population from Fort Wayne, Indiana to Chicago.
- There are nine cities in the Group I 250,000 – 499,999 subgroup that are in the Midwest region, ranging in population from Fort Wayne, Indiana to Kansas City, Missouri.
- There are 192 cities in Group II, ranging in population from Kenosha, Wisconsin to Durham, North Carolina.
- Note that some of the 2014 FBI groups/subsets did not include jurisdictions that would be expected to be included based on US Census data. The reasons for the omissions are not clear.

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Appendix K. MPD 2015 Patrol Workload Analysis – Full Report



2016 Patrol Staffing Report

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. This analysis looks at 2015 data (note that 2014 data was also analyzed separately to validate the 2015 results, due to the new data sources).

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 officer. However, some positions – particularly patrol sergeant – have a direct relation 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) records. This data is supplemented by Dictaphone and field report 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.

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 (training, special assignment, etc.). An analysis of leave time will determine the shift relief factor (SRF), a number indicating 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. 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. 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 2015 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 has historically utilized slightly more than 100 incident types to categorize the calls that officers respond to. The new Tri Tech CAD has almost 800 law enforcement incident types. Converting these fields requires additional processing, and creates some limitations when comparing current data to historical data.

Analysis of MPD's 2015 patrol workload began with a data output from the CAD. The file contains more than **21 million** data fields. This database was then filtered to remove records not related to MPD patrol workload. This is done primarily by unit ID (radio call number). The 2015 analysis included only CAD records assigned to MPD patrol officers (as well as officers assigned to the Downtown and Southwest Safety Initiatives). This is a more conservative approach than prior years' analyses. Those processes (like the original Etico report) included workload from some non-patrol units (such as neighborhood officers, community policing teams, etc.). These units unquestionably spend some portion of their time handling patrol workload, however there is no practical way to differentiate patrol and non-patrol CAD entries for these units. Including only patrol officer CAD activities is a more conservative approach to calculating workload, and clearly understates actual MPD patrol workload.

The 2015 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. 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 unit was created to provide some level of MPD service. Future consideration should be given to including at least a portion of incidents handled through the self-reporting system in the workload analysis. The purpose of inclusion would be to consider work currently handled through self-reporting when determining patrol staffing levels, as most citizens would likely prefer that this work be handled by an officer in person rather than through self-reporting.

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 dictation report data (from the Dictaphone server), daily logs and survey results are used to determine average report times (for both field reports and dictated 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. A survey was completed to obtain estimates of how often officers complete reports (both field and dictated) while still assigned to the incident on the CAD. This was then accounted for in the calculations to avoid double counting any officer time in the reactive workload.

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 the multi-year average was used in the calculations.

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

Results of Workload Analysis

The data showed **136,049** patrol incidents in 2015 (meaning 136,049 CAD incidents that had a patrol officer assigned), and **136,161** hours of reactive patrol workload.

It is important to recognize that this data is based on incidents as tracked in the CAD, and not on IBR data. When a Public Safety Communications Center employee takes an initial call from a citizen on an incident, a CAD incident – with an incident type – is created. Often, investigation will show that a crime other than that initial incident type was committed. 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.

As indicated above, it is difficult to compare this data to historical patrol workload data. However, an analysis of 2014 patrol workload data was performed (including only CAD records assigned to MPD patrol officers); that process showed 128,412 patrol incidents and 131,108 hours of reactive patrol workload in 2014.

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 reflects 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 several years, and requires sergeants and officers assigned to non-patrol positions to work up to four 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.

Leave time in 2015 was analyzed for the pool of patrol personnel who were in patrol positions at shift change 2015, and who remained so for the entire year. This was a pool of 184 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	.436
Bereavement Leave	.391
Family Leave	2.367
Holiday Leave	2.137
Sick Leave	3.815
Jury Duty	.002
MPPOA Earned Time Off	.773

Category	Days
Vacation Leave	16.17
Workers Comp Time Off	.872
Light Duty	7.204
Special Event	.533
Special Assignment	5.423
Training	7.556
Military Leave	1.054

Net Compensatory Time:

Comp Time Used	Days
Comp Time Off	15.844

Overtime Worked	Days
Patrol Overtime	8.081

[Net compensatory time also includes staffing contingency days worked and shift change RDO adjustments]

These figures compare with prior years as follows:

Time Off Category	2008	2009	2010	2011	2012	2014	2015
Regularly Scheduled Days Off	121.67	121.67	121.67	121.67	121.67	121.67	121.67
Admin & Benefit Time	29.91	29.77	27.5	26.94	26.91	28.319	27.346
Non-Patrol Time	19.07	21.97	22.88	24.5	20.47	25.30	21.40
Net Comp Time Off	9.47	6.40	9.92	7.42	8.24	6.73	7.76
Totals	180.12	179.81	181.54	180.25	177.29	182.02	178.17

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 average time away from patrol per patrol officer in 2015 was down from 2014, and was below average (for the years the calculation has been done). Utilizing the Etico shift relief formula, this data

results in a shift relief factor of **1.95**. This means, generally, that MPD needs to have 1.95 officers assigned to patrol for each position to be staffed every day of the year. This figure has remained fairly consistent since 2008.

Note that the shift relief factor reflects the actual level of non-patrol and leave time, which is not necessarily the desired level of non-patrol and leave time. 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 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. 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 between proactive and reactive time as being a reasonable goal for MPD patrol staffing. We believe this staffing is required to provide the level of service that the community expects.

196 MPD positions are assigned to patrol (officers; excluding sergeants), though actual patrol staffing at any given time will vary based on a variety of factors. Utilizing the Etico methodology, 2015 patrol workload and leave time data demonstrate that MPD patrol staffing should be **209 officers**. This is based on an even split of proactive and reactive time. Meeting this standard would require the addition of

thirteen officer positions to patrol. This increase would also require the addition of **one** sergeant position to patrol (based on span of control).

Patrol Incidents by Incident Type by Year

Incident Type	2009	2010	2011	2012	2014	2015
911 Disconnect	27	7	10	267	7114	11012
Accident - Hit & Run	1505	1570	1408	1385	1475	1563
Accident - Private Property	755	863	669	781	377	704
Accident - Property Damage	5226	5179	5061	4886	5882	5558
Accident w/ Injuries	1459	1469	1355	1201	864	960
Accident-Citizen Report	16	8	17	12	0	0
Accident-MV/Deer	64	52	49	39	31	58
Adult Arrest	785	794	835	692	331	521
Aggravated Battery	409	399	346	270	6	8
Alarm	2569	2837	2705	2802	3170	3402
Animal Complaint - Bite	30	25	25	34	31	14
Animal Complaint – Dist.	735	762	500	626	656	718
Animal Complaint - Stray	410	471	339	463	289	320
Annoying/Obscene Phone Calls	706	679	521	461	108	123
Arrested Juvenile	33	92	93	82	50	31
Arson	68	54	62	30	11	5
Assist Citizen	6193	6495	5813	5933	4856	4566
Assist Fire/Police	3436	3341	3250	3276	4339	3165
ASSIST K9	153	186	213	178	17	12
Attempt to Locate Person	692	719	921	992	861	1254
Attempted Murder	0	0	0	1	1	0
Attempted Suicide	96	82	151	177	454	77
Battery	1302	1221	1235	1166	613	610
Bicycle Accident	9	5	0	4	6	10
Bomb Threat	9	10	15	19	32	7
Check Parking Postings	9	9	2	2	1	2
Check Person	9342	9686	8754	9026	7873	10547
Check Property	6421	6556	5238	5503	4525	5726
Child Abuse	131	109	108	154	162	184
Child Neglect	54	45	64	69	97	79
Civil Dispute	717	752	795	817	660	863
Damaged Property Complaint	1584	1460	1315	1467	1033	1046
Death Inv/Suicide	180	212	238	243	142	130
Disturbance Call	6151	6297	6725	6731	6434	5826
Domestic/Family Trouble	3346	3407	3164	3175	3171	3358
Drug Incident	1199	1223	1631	1587	1163	1266
Emergency	3	0	2	2	4	0
EMS Assist	1133	1607	1729	1855	2375	3587
Enticement/Kidnapping	43	40	21	26	39	20
Escort Conveyance	400	446	410	432	350	720
Exposure	166	102	18	26	83	47

Incident Type	2009	2010	2011	2012	2014	2015
Extortion	2	1	2	0	0	8
Alarm - Broadcast & File	370	328	274	234	2	0
Fight Call	662	641	295	215	258	541
Fire Investigation	25	10	22	12	5	4
Forgery	34	59	58	71	425	6
Found Person	52	84	127	119	129	124
Found Property	1145	1199	1337	1384	1266	1367
Fraud	917	963	785	802	490	983
Graffiti Complaint	393	244	199	129	103	121
HANG UP OF 911 CALL	0	0	0	0	0	0
Homicide	3	3	6	3	1	4
ICE RESCUE	0	0	0	0	0	0
Information	6024	6275	6552	6370	4124	2645
Injured Person	60	68	69	56	23	38
Intoxicated Person	413	426	290	297	343	556
Juvenile Complaint	1421	1258	835	646	341	510
Landlord Tennant Trouble	230	143	131	153	103	157
Liquor Law Investigation	661	757	685	745	152	217
LIQUOR LAW/BAR CHECK	394	164	156	177	89	73
Local Ordinance Violation	6	10	51	19	0	0
Lost Property	100	81	81	86	34	54
Miscellaneous Sex Offense	24	31	69	45	58	103
Missing Adult	276	288	305	273	468	309
Missing Juvenile/Runaway	771	760	640	621	460	681
Neighbor Trouble	605	526	470	486	313	429
Noise Complaint	4651	4366	4227	4189	2701	3331
Non-Residential Burglary	379	432	277	219	218	257
NON-URGENT NOTIFICATIONS	106	53	65	66	49	15
Odor/Smoke Complaint	0	0	0	1	6	3
OMVWI/Intoxicated Driver	411	399	406	343	155	165
On Street Parking Complaint	667	573	579	519	391	454
Overdose Investigation	107	101	88	87	46	83
PARKING STREET STORAGE	17	29	27	21	0	0
Alcohol Conveyance (Detox)	1863	2138	1630	1404	123	150
Person Down	59	50	44	73	9	14
Person with a Gun	21	44	5	12	234	102
PHONE CALL	8754	7772	8148	8154	6566	5369
PNB/AED Response	42	63	48	44	168	179
Preserve the Peace	1143	1238	1245	1249	1384	1229
Private Prop. Parking Compl.	852	757	773	715	464	462
PROBLEM SOLVING-PERSON	9	12	8	12	12	5
PROBLEM SOLVING-PROPERTY	82	21	65	55	11	15
Prostitution/Soliciting	128	102	46	34	15	29
Prowler Complaint	84	31	19	14	15	20
Rec/Stolen Outside Agency	145	169	135	106	79	78
REPOSSESSION	25	12	8	6	3	4

Incident Type	2009	2010	2011	2012	2014	2015
Residential Burglary	1269	1474	1336	1506	1251	1210
Retail Theft	2265	2175	2001	1901	1244	1683
Robbery-Armed	190	172	114	118	118	101
Robbery-Strong Armed	191	170	147	141	125	130
Safety Hazard	3373	3395	3757	3581	4224	4396
Serving Legal Papers	452	537	528	441	308	462
Sexual Assault 1-2-3-4-/Rape	95	155	131	184	182	199
Sexual Assault of a Child	105	78	81	110	134	155
SIGNIFICANT EXPOSURE	2	7	7	0	3	1
Silent Case Number	47	69	60	88	50	75
Solicitors Complaint	45	59	59	79	23	123
Special Event	22	51	89	111	59	114
Stalking Complaint	129	139	133	124	126	110
Stolen Auto	596	558	550	424	528	533
Stolen Bike	65	64	42	53	19	33
Stolen Other Vehicle/Cycle	72	89	83	67	1	0
Suspicious Person	1673	1713	2519	2750	2727	1892
Suspicious Vehicle	1770	1823	1709	1617	1924	2131
Theft	1697	1798	1849	1890	2486	2048
Theft from Auto	525	628	532	488	320	398
Threats Complaint	1069	1094	1172	1204	1846	1791
Towed Veh/Abandonment	5	9	9	5	38	20
Towed Vehicle	146	130	118	89	0	0
Traffic Arrest	1282	1140	1149	1051	17	15
TRAFFIC COMPLAINT	100	194	329	315	391	697
Traffic Incident	4023	3188	2402	2272	507	283
Traffic Incident/Road Rage	139	141	181	200	86	5
Trespassing Complaint	827	896	1655	1946	2031	775
UNKNOWN	14	26	15	9	299	38
Unwanted Person	1309	1262	825	801	1232	2421
Violation of Court Order	882	948	824	828	280	511
Weapons Offense	279	254	292	340	343	522
Worthless Check	16	24	9	13	6	12
Assist/Community Policing	114	146	148	135	13	0
Language Translation	28	16	38	17	12	12
Follow Up	2489	2415	2330	2655	2452	3752
On Duty Training	4	10	55	37	48	145
On Duty Court	60	45	51	40	57	146
911 Call Abandoned	5686	5075	4469	3403	2957	3599
911 Call Disconnected	2158	1807	2274	2464	0	0
911 Call Misdial	2807	3041	2814	2427	2123	2383
911 Call Silent	3472	3716	4925	4882	2485	0
911 Call Unintentional	824	1312	2136	2608	4685	6159
911 Call Playing with Phone	86	388	446	417	506	602
911 Call Multiple/Nuisance	6	3	10	19	12	10
911 Call Question	39	39	61	46	44	23

Incident Type	2009	2010	2011	2012	2014	2015
911 Call Test	26	14	12	10	12	11
Voided Case/Incident Number	128	115	120	92	0	0
Explosives Investigation	1	0	0	0	9	0
Accident Unknown	207	216	240	249	565	557
Traffic Stop	9323	10521	9940	8797	7177	6043
Check Property/Vacation	1	0	1	0	0	0
Assist State Patrol	1	0	3	0	0	0
Assist DCSO	3	5	8	6	0	0
Identity Theft	18	22	7	24	0	0
Escapee/Info	0	4	2	4	2	0
Check Person/Weapon	0	0	0	2	0	0
CONVEYANCE	0	0	0	0	299	0
Foot Patrol	861	391	281	566	504	773
TOTAL	144715	145713	142167	140804	128412	136092

Detailed Leave Time Information – 2016 Patrol

Leave/Benefit/Non-Patrol Time:

Category	Days
Admin Leave - No Pay	0.11976
Admin Leave - With Pay	0.3159
Bereavement Leave	0.3913
Family Leave: AWOP	0.28261
Family Leave: Sick Used	0.82523
Family Leave: Vacation	0.58749
Family Leave: Comp	0.67203
Holiday: Request Off	0.9358
Holiday: Order Off	1.20109
Jury Duty	0.00179
MPPOA Earned	0.77304
Military Leave	0.40217
Military Paid	0.65217
Military Leave AWOP	
Sick Leave	3.81529

Category	Days
Vacation: 1st Pick	5.78261
Vacation: 2nd Pick	3.13043
Vacation: 3rd Pick	1.11957
Vacation: SP#1	0.20893
Exigent Leave Vacation	0.16885
Vacation: Standard	5.68381
Vacation: SP#2	0.07609
Workers Comp Time Off	0.87242
Light Duty: (LD-WC)	2.47317
Light Duty:(LD-ND)	4.73132
Spec. Event Assigned	0.53329
Spec. Assignment	5.6678
Exigent Leave MPPOA	0.0074
Training	7.73132
Training Partial	0.18071

Net Compensatory Time:

Comp Time Used	Days
COA+30 Days	3.0091282
Comp Time: Off	10.309708
Comp Time: SP#1	0.0519429
CU/W-VU	1.6575838
Exigent Leave Comp	0.4677717
Shift Change RDO	0.3478261

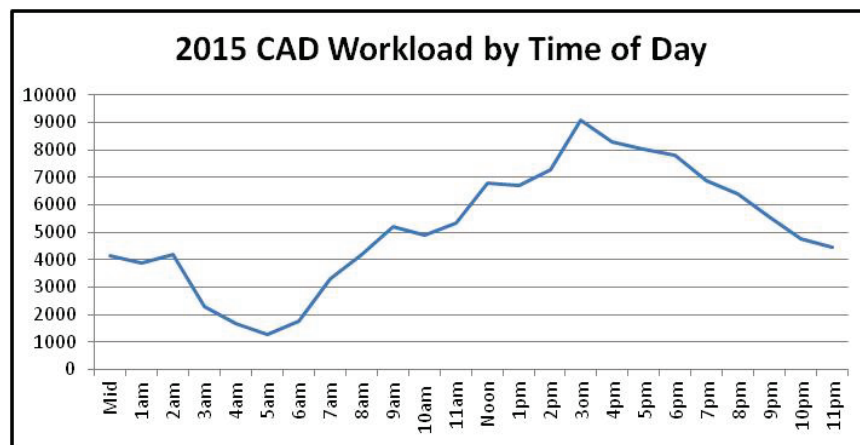
Overtime Worked	Days
General	3.7031
Call in Voluntary	0.2096
Call in Order	0.0135
Holdover Voluntary	0.1997
Holdover Order	0.0694
Major Case	1.924
Shift Change RDO Worked	0.3122

Non-patrol Personnel Patrol Work:

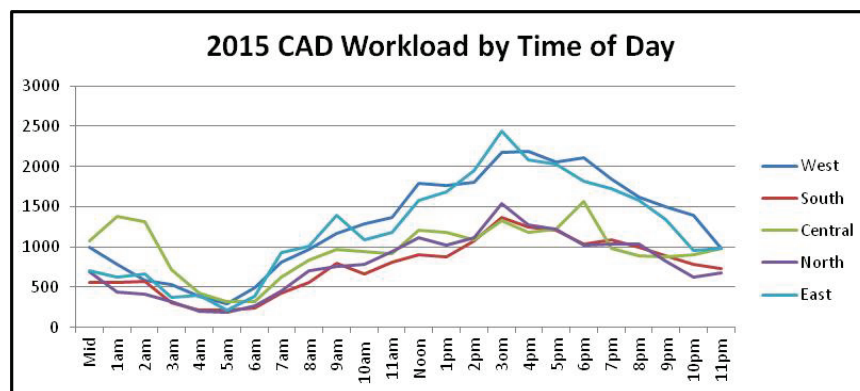
Overtime Worked	Days
Call in Voluntary	0.317799
Call in Order	0.021456
Holdover Voluntary	0.145018
Holdover Order	0.033945
Staffing Contingency	1.131304

Workload Overview

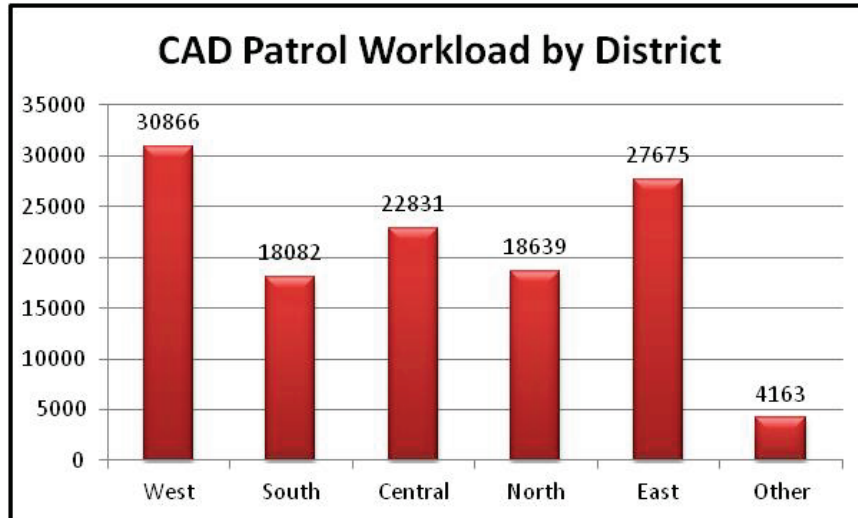
The following charts are based on CAD data only, and generally include all patrol CAD workload (reactive and proactive).



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:

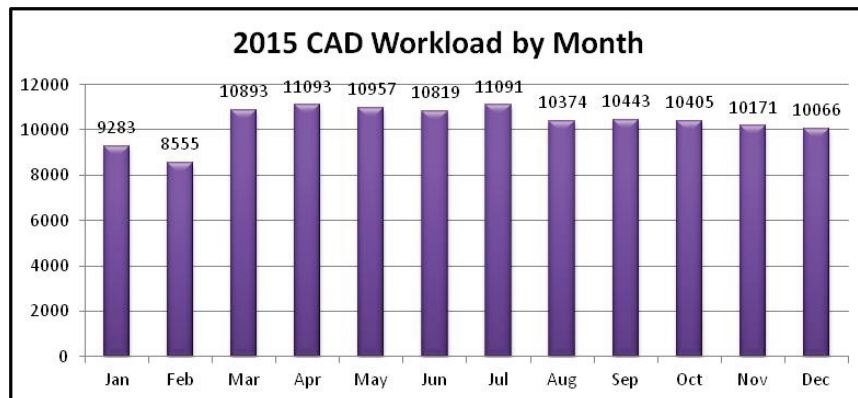


2016 hours of patrol work by district:

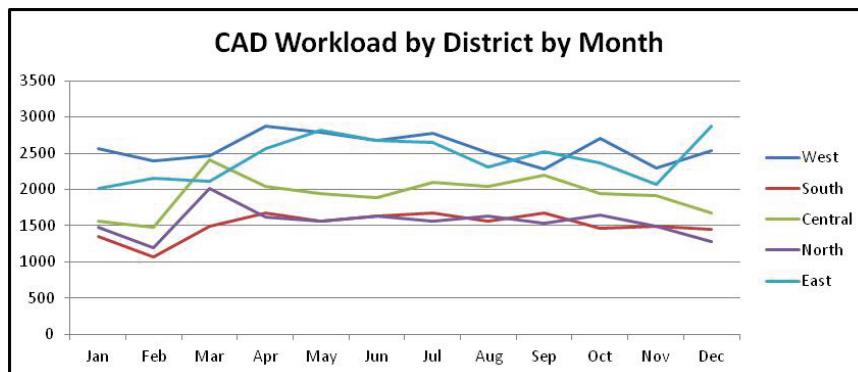


*excludes on duty court and training

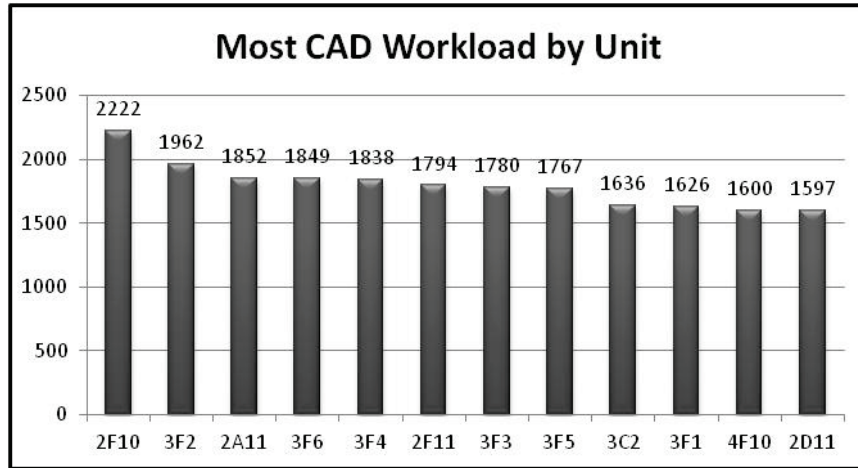
CAD workload by month:



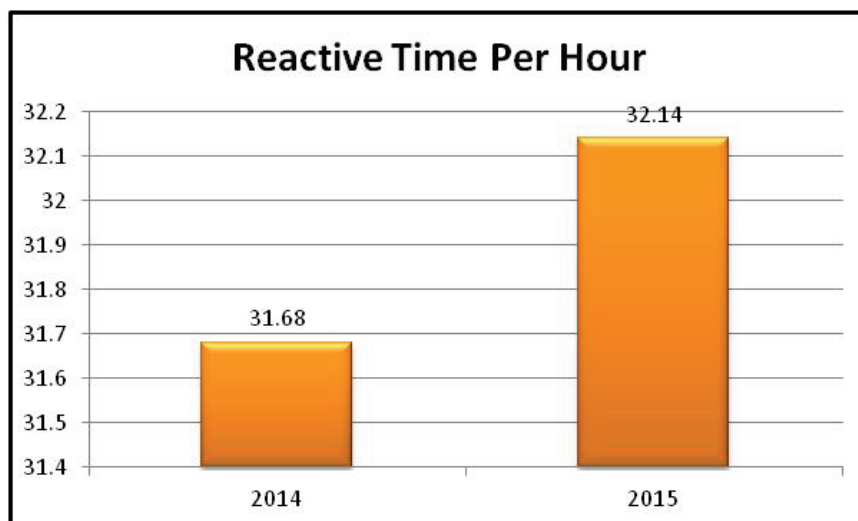
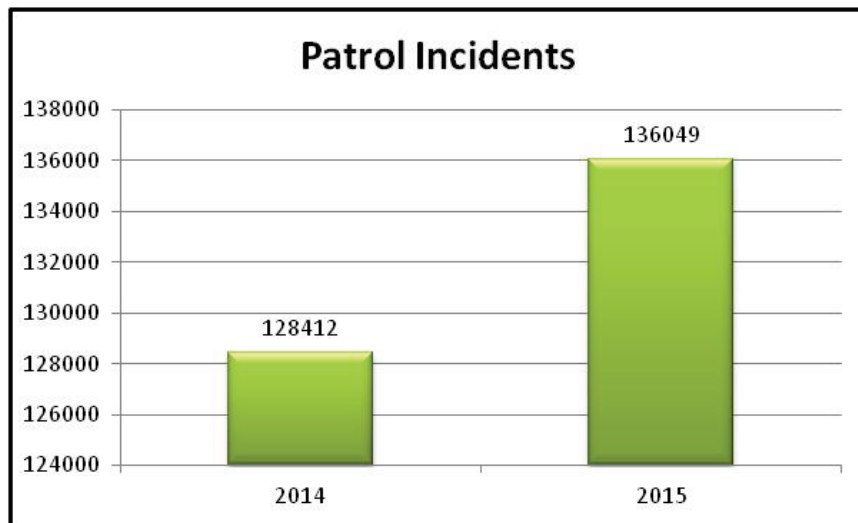
CAD workload by district by month:



CAD workload by patrol unit:

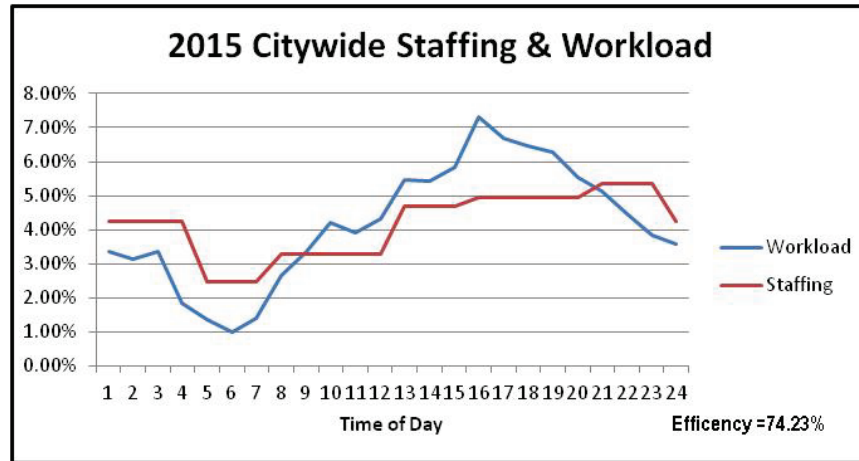


A historical overview of patrol incidents and workload:



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. Staffing efficiency in 2012 was down slightly from 2011. However, analysis shows that efficiency under the five-shift model was 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

Note that the original Etico patrol study used slightly different methodology to measure efficiency, matching average workload by time of day to total patrol staffing by district (rather than to daily staffing citywide). The department feels that using citywide daily staffing is the more relevant measure. The tables above reflect this methodology.