



# **COMPSTAT AND CITISTAT: SHOULD WORCESTER ADOPT THESE MANAGEMENT TECHNIQUES?**

**Report No. 03-01  
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## Executive Summary

Based on an analysis of CompStat and CitiStat, two municipal management programs introduced into New York City and Baltimore, respectively, in the 1990s, and then copied by many other cities, the Research Bureau believes that their adoption in Worcester could lead to improved performance of municipal agencies and increased accountability for results. Under these programs, the performance of government agencies is measured by selected indicators (i.e. number of crimes, response to complaints), and their managers are held accountable for the results.

The Research Bureau offers the following recommendations that would enable Worcester's municipal government to implement these management techniques:

- The Geographic Information System (GIS) database of the Worcester Police Department (WPD) should be completed so that incidents of crime can be mapped to make better use of data prepared by the Department's crime analyst.
- The WPD should institute regular strategy meetings like those in the Lowell Police Department to discuss the crime analysis data and develop strategies for addressing problems. Lowell's bi-monthly meetings consist of an in-depth analysis by one of three sector captains of recent trends in his sector. His report is illustrated by a large projector screen displaying an interactive map of the city, which can show multiple incidents in any part of the city. The format of the meetings generates lively discussion and results in the development of strategies to address the latest crime trends.
- The WPD should investigate the possibility of changing the Department's command structure from a shift-based to a geographic-based structure. This would enable those in charge of a particular geographic area to address incidents in that area and to be held accountable for the results of their strategies.
- The City Manager should consider implementing a CitiStat program similar to the one in Baltimore. Under this program, the performance of all departments, not just the police, is measured by clearly defined indicators. Regular meetings are held to discuss performance, and managers are held accountable for results.
- The City Manager should consider implementing a "311" call center for all non-emergency calls through which citizens can lodge complaints and service requests. Since the citizen may not know the appropriate agency to call for a particular issue, the "311" operator is able to refer the complaint or request to the proper office. In cities where "311" call centers have been established, the citizen is also able to follow up on his request, which encourages a helpful and timely response from municipal employees.

## **I. Introduction**

The purpose of this report is to discuss CompStat and CitiStat,<sup>1</sup> two municipal management techniques introduced into New York City and Baltimore, respectively, during the last decade. The goal of these management techniques is to improve the performance of government agencies and increase accountability for results. Performance indicators measure government agencies' utilization of available resources (i.e. number of employees) and delivery of services to the public (i.e. police patrol), as well as the effects on conditions in the city (crime statistics).

The report will discuss how these techniques are used in New York and Baltimore, as well as in Lowell and Chattanooga, two cities that more closely resemble Worcester in size. An analysis of the benefits and problems of using these management tools in the cities mentioned above should provide some indication of whether they should be adopted in whole or in part by Worcester's municipal government.

## **II. What are CompStat and CitiStat?**

CompStat originated in the New York City Police Department in 1994 as a crime-tracking and management tool. The purpose of the program is to increase accountability within the department, with a view to more effective crime reduction. As noted in the Research Bureau's recent report on "Benchmarking Public Safety In Worcester" (CCPM-03-01), because external conditions such as the economy and changing demographics affect the level of crime in a community, crime rates do not directly reflect how well a police department is functioning. However, the focus of police activity and the deployment of resources can have an impact on the level of crime.

Under CompStat, precinct commanders and department managers meet on a regular basis to review performance measurements, in the form of crime statistics and organizational data, and discuss strategies for reducing crime as well as managing resources. The Police Commissioner and his executive staff question anyone whose precinct or department is not performing well, according to their established performance targets. If a precinct commander has not responded to the Commissioner's requests over several CompStat meetings (for example, if he has not reallocated patrols to an area where car thefts have been on the rise, or has not addressed an increase of citizen complaints about police conduct), then he may be removed from his post, usually being demoted to a lower position in the department.

Up-to-date data enable management to hold subordinates accountable for results. This ability to hold supervisors accountable for their performance is, according to the NYPD, a primary reason for the program's success.<sup>2</sup> Although CompStat has been cited as revolutionary<sup>3</sup> because of the

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<sup>1</sup> The name CompStat derives from a computer document, named "compstat.doc," containing the initial outline for the NYPD's program, and short for either "computer statistics" or "comparative statistics." CitiStat is an alteration of the original name to indicate the application of CompStat methodology to all municipal (city) services.

<sup>2</sup> <http://www.nyc.gov/html/nypd/html/chfdept/chief-of-department.html>; "Murder Mystery," *Governing Magazine*, June 2002, <http://www.governing.com/archive/2002/jun/murder.txt>.

<sup>3</sup> "The Birth of CompStat," *Baseline Magazine*, September 10, 2002, <http://www.baselinemag.com>.

reductions in crime rates in New York City, it is apparently an application of tried and true management and organizational methods used by corporations.<sup>4</sup> CompStat and its variants are applying “best corporate practices” to municipal services.

Although today the program is still essentially the same as it was nine years ago, it has expanded from utilizing the original seven major crime indicators<sup>5</sup> to include a number of performance indicators, such as vehicle and building maintenance, the number of arrests made by officers, and response times to emergencies. Anything related to reducing crime and managing the police department can be included. The idea of CompStat has spread to other police departments as well as to other agencies in other cities. The most notable broader application of CompStat is CitiStat, the City of Baltimore’s accountability management program that applies the tools and methods of CompStat to all municipal agencies, such as fire, housing and public works departments. Whereas CompStat is strictly focused on managing the business of police departments, CitiStat measures the performance of multiple agencies, tracking their use of city resources (i.e. number of vehicles) and delivery of services to the public (i.e. number of housing inspections), as well as benchmarking conditions in the city (i.e. number of lead poisoning cases).

The following section outlines the four major components of the CompStat method of performance measurement and accountability. Subsequent sections will illustrate how the CompStat process works by looking at four cases:

- The New York Police Department, a large CompStat program.
- The Lowell Police Department, a small CompStat program.
- The City of Baltimore, a large CitiStat program.
- The City of Chattanooga, a small CitiStat-like program.

(Both Lowell and Chattanooga are in the same population range as Worcester: cities of 100,000 to 200,000 people.) The final section will discuss what the City of Worcester and the Worcester Police Department are doing, and consider whether a CompStat program in any form would be beneficial to the City.

### **III. The CompStat Process**<sup>6</sup>

#### **Accurate and timely intelligence**

According to the New York Police Department, the first step in CompStat’s method of accountability is to develop “accurate and timely intelligence.” In order to assess performance in any category and develop a strategy for addressing specified goals, the organization must first have detailed, precise, and up-to-date information on current conditions. These data are gathered and analyzed by a data analysis team (for smaller organizations, a single analyst may suffice).

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<sup>4</sup> O’Connell, Paul E., “Using Performance Data for Accountability,” Managing for Results Series, The PricewaterhouseCoopers Endowment for the Business of Government, August 2001.

<sup>5</sup> The Federal Bureau of Investigation publishes annual “Uniform Crime Reports,” using data collected from most law enforcement agencies around the country. The seven most widely cited crime indicators, called “Part I” crimes, are the levels of homicide, rape, robbery, aggravated assault, burglary, larceny, and motor vehicle theft.

<sup>6</sup> Although there are many sources describing the four-step CompStat process, we generalize from the NYPD’s original “Crime Reduction Principles,” available at <http://www.nyc.gov/html/nypd/html/chfdept/reduction.html>.

The data and findings are subsequently presented at regularly scheduled meetings of all department heads. Data are presented on maps of the city, showing geographic patterns and trends over time.

In the past, crime data, if they were used at all, were obtained from the FBI's annual "Uniform Crime Reports." These data are often too outdated to be of any use. For example, the FBI will not publish the data from January 2002 until about June 2003, a full eighteen months after the data are most useful.

### **Effective tactics**

The second part of the CompStat process is developing "effective tactics." Strategies are developed to try to solve any problems that are uncovered by analyzing the data. This usually occurs during the regularly scheduled strategy meetings, which are a forum not only for promoting accountability, but also for evaluating the gathered information, identifying problems, setting goals, brainstorming solutions, and coordinating efforts. One of the benefits of these meetings is that management personnel from all departments are present, which makes communication across departments more efficient. Under the CompStat process, strategy development is organized around data collection and performance evaluation.

### **Rapid deployment of personnel and resources**

The third step in the CompStat process is "rapid deployment of personnel and resources." After the first step informs managers about what is going on in their neighborhoods or departments, and once the strategies have been developed, it is important to enable people in the field to mobilize quickly. The organization still has a role in managing the supply of resources, but the decisions about how to best utilize available resources are often made at the lower management levels (such as how many patrols should be utilized in a neighborhood and at what time of day). As long as all of the goals of the organization are met, then upper management is not too concerned about the details of how problems get solved, so long as they are compatible with established rules.

### **Relentless follow-up and assessment**

The final step in the CompStat process is "relentless follow-up and assessment." Once a problem is identified, a strategy developed, and resources mobilized to put it into effect, the organization follows up and assesses its progress: Is the strategy working? Are there any complications? Are there any new problems? Many within the NYPD believe that follow-up has been the most important contributing factor in reducing crime in New York City,<sup>7</sup> and researchers claim that lack of follow-up has been the cause of the eventual failure of other policing initiatives around the country.<sup>8</sup>

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<sup>7</sup> John Buntin, "Murder Mystery," *Governing Magazine*, June 2002, <http://www.governing.com/archive/2002/jun/murder.txt>.

<sup>8</sup> Harvard criminologist David Kennedy, quoted in "Murder Mystery."

#### **IV. New York Police Department: CompStat**

The New York Police Department, under Police Commissioner William Bratton, developed CompStat as its crime-tracking and accountability management system in 1994. The bi-weekly Crime Strategy meetings are used to evaluate trends in data and hold commanders accountable for being ill prepared or responding poorly to problems. The Crime Strategy meetings are only a portion of a larger effort under the CompStat model to monitor and evaluate performance, which includes pre-CompStat briefings, Precinct Management Team meetings, strategy evaluation projects conducted by ranking members of the department, and the Police Commissioner's weekly briefing to the Mayor. Performance measurement efforts exist at all levels of management.<sup>9</sup>

##### **The Crime Strategy Meeting**

The New York City Police Department is divided among 76 Precincts, 9 Police Service Areas, and 12 Transit Districts.<sup>10</sup> Each of these 97 divisions compiles weekly data on various crime and performance categories and submits them, along with a written review of significant cases, policing activities and other relevant information, to the CompStat Unit, which compiles and analyzes the data for all divisions. Crime Strategy meetings are conducted every week, although not everyone gives a presentation at every meeting, due to the large size of the department. However, since presenters are called on randomly, everyone must be prepared to present at every meeting.

To collate the data from 97 divisions, the NYPD's CompStat Unit includes 15 statisticians to analyze the data, and 10 staff members helping to gather the statistics. In addition, 3 to 5 staff members at each division aid in the data collection efforts. All of the information is published in a weekly CompStat Book, which is distributed at the meetings. The NYPD uses a combination of off-the-shelf software, most notably MapInfo Professional, combined with some internally developed data analysis programs. The Crime Strategy meeting room is equipped with large video projectors that can display several tables, figures and maps at the same time. The system allows commanding officers the opportunity to respond to questions about any patterns or anomalies in the data, as well as available solutions. Again, due to the size of the NYPD, the meetings are fairly structured, although spontaneous discussion does occur.

Over the last eight years, the program has expanded from measuring the FBI's seven main Uniform Crime Report categories, to measuring as many as 700 "performance indicators."<sup>11</sup> The data are divided into two categories: the crime data and the Commander Profile Report (CPR). A precinct commander's CPR includes all pertinent information about that commander, including appointment date, years in rank, education, and special training, as well as administrative data about his or her command, such as overtime, departmental vehicle accidents and civilian complaints. Crime data are also separated into two categories, major and minor crimes. A key focus of the NYPD's Crime Prevention Strategy has been to enforce violations of minor crimes,

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<sup>9</sup> <http://www.nyc.gov/html/nypd/html/chfdept/chief-of-department.html>.

<sup>10</sup> <http://www.nyc.gov/html/nypd/html/chfdept/process.html>.

<sup>11</sup> These performance indicators include measurements of additional major crimes, such as shooting incidents and arson; minor crimes, such as excessive noise and prostitution; resource management, such as vehicle repair times and absence rates; and delivery of services, such as officer-initiated incident reports and number of arrests.

such as panhandling or public drinking. Putting someone in jail for a minor crime prevents that individual from committing any crimes while off the streets.<sup>12</sup> An example of this is a group of people on the street drinking beer. One of them starts a fight, and people end up being arrested for aggravated assault or sent to the hospital. By arresting people for public consumption of alcohol, the fight never occurs, and no one gets hurt.

The Crime Strategy meetings are primarily a forum for sharing information and holding commanders accountable for their precinct's efforts to reduce crime and for their management of their precinct's performance. Executive staff members ask questions about crimes and arrests, including specific cases and initiatives taken up by the commander, in order to expose flaws or confirm improvements. Commanders are expected to know specific details regarding crime in their precinct and develop strategies to reduce it. While commanders develop specific strategies, the executive staff keeps a watch on their successes and failures. Inability to adapt to new problems opens commanders to criticism and potential dismissal. One of the tactics used by executive staff members during the meetings is to publicly berate commanding officers for sub-par performance or lack of knowledge. This humiliation of individuals who are not performing, which has become infamous among some police departments, has been cited by the creators of CompStat as a main contributing factor in enforcing accountability and spurring officers to perform well.<sup>13</sup> CompStat in the NYPD is focused on exposing problems. Solving many of these problems is often done at the precinct level at "pre-CompStat" meetings.<sup>14</sup>

The NYPD has expanded CompStat by inviting several other departments to take part in the meetings, including the District Attorney's Offices, the Board of Education's Division of School Safety, and the Management Information Systems Division. Recently, New York City has adopted a broader CompStat-style program called the Citywide Accountability Program (CAP), which oversees 20 departmental CompStat programs, such as the Police, Corrections, and Fire Departments.<sup>15</sup>

Although the CompStat process has allowed management in the NYPD an in-depth look at various types of data, the access to information has stopped there. A team of consultants recently hired by the NYPD reported, "the department needed to address its software and hardware infrastructures, its communications network, and its project management skills... The difficulty of finding data (such as criminal records) makes it hard to react at a moment's notice to [criminal] threats."<sup>16</sup> The NYPD's size (nearly 40,000 sworn officers) makes it difficult to coordinate information, and even though data are collected through the CompStat process, the 60-plus databases, such as criminal records, crime reports, and criminal investigations, are not yet integrated into a single system. Much time is wasted logging into and out of databases (accessible only one at a time from a terminal) to find needed information. The result is less efficient field operation, or, in CompStat language, less efficient resource deployment.

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<sup>12</sup> See Kelling, George L., and Catherine M. Coles, *Fixing Broken Windows: Restoring Order and Reducing Crime in Our Communities*, Martin Kessler Books (New York: 1996).

<sup>13</sup> Maple, Jack, and Chris Mitchell, *The Crime Fighter: Putting the Bad Guys out of Business*, Doubleday (New York: 1999).

<sup>14</sup> Kelling, George L. and William H. Sousa, Jr., "Do Police Matter? An Analysis of the Impact of New York City's Police Reforms," Center for Civic Innovation at the Manhattan Institute, December 2001.

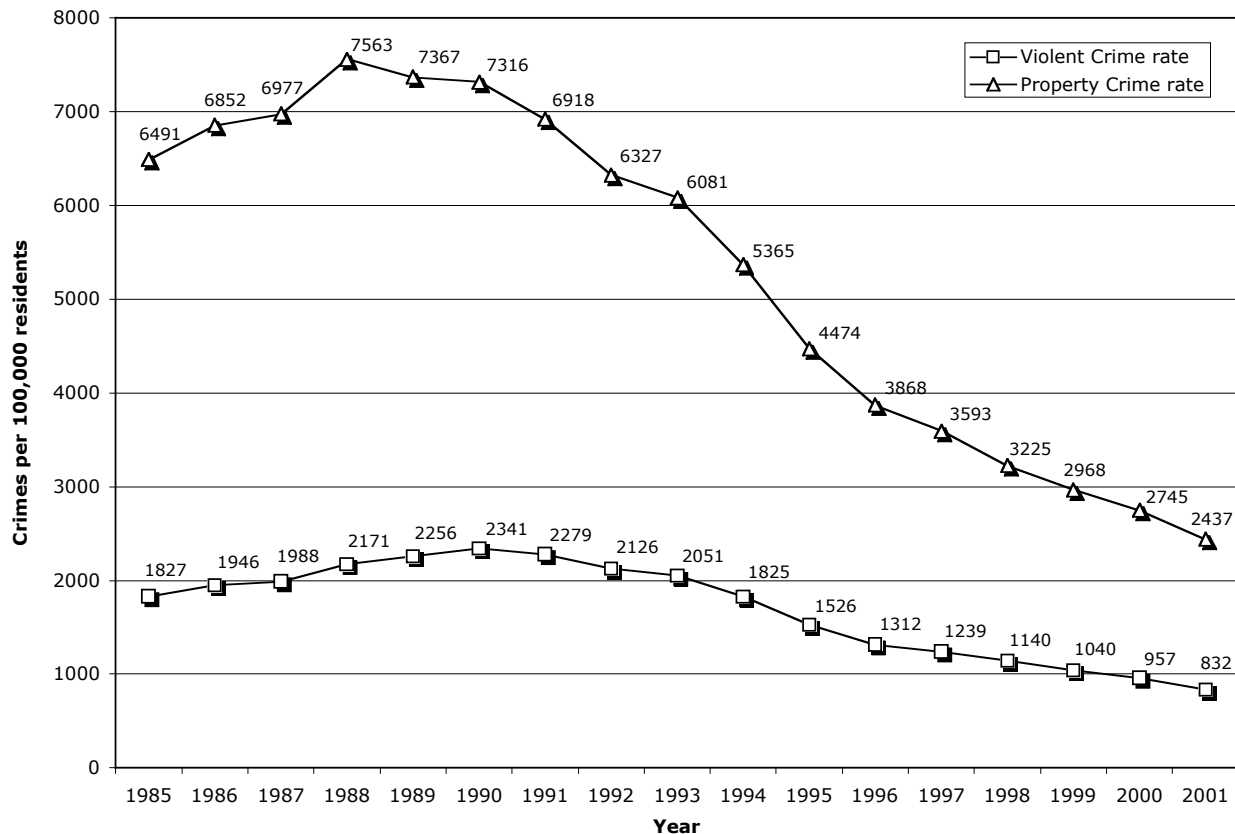
<sup>15</sup> [http://home.nyc.gov/portal/index.jsp?pageID=nyc\\_stat\\_reports&catID=1724](http://home.nyc.gov/portal/index.jsp?pageID=nyc_stat_reports&catID=1724).

<sup>16</sup> "The Disconnected Cop," *Baseline Magazine*, September 2002, <http://www.baselinemag.com>.

## Results

While it is not possible to attribute crime reduction to one factor, it should be noted that reported violent and property crime rates dropped after the introduction of CompStat in 1994. Figure 1 shows the trends in violent and property crimes per 100,000 people in New York City between 1985 and 2001.<sup>17</sup> During the six years prior to the introduction of CompStat (1988-1994), violent crime declined 15.9% (from 2,171 to 1,825), and property crime declined 29.1% (from 7,563 to 5,365). During the six years after the implementation of CompStat (1994-2000), violent crime declined 47.6% (from 1,825 to 957), and property crime declined 48.8% (from 5,365 to 2,745).

**Figure 1: New York City Reported Crimes per 100,000 residents (1985 – 2001)**



Sources: Bureau of Justice Statistics, Federal Bureau of Investigation.

## V. Lowell Police Department: CompStat

The Lowell Police Department's CompStat program officially began in 1996, under the guidance of Police Superintendent Edward Davis. In Lowell, CompStat works in conjunction with several other initiatives, including community policing and high-tech digital communications.

<sup>17</sup> Forcible rape is excluded from all crime data in this report due to a procedural error in Worcester's reported data.



Lowell's community policing program covers a wide array of initiatives that focus on partnering with community groups, neighborhoods and businesses to "reduce crime and the fear of crime."<sup>18</sup> These initiatives include youth programs such as D.A.R.E.; neighborhood precinct stations to enhance the department's ability to interact with residents; foot, bike, horseback and boat patrols to increase visibility; a mobile command center; and a volunteering program.<sup>19</sup> The community policing programs are coordinated under the CompStat process. Residents' suggestions and complaints, as well as public survey data, are evaluated as part of the intelligence gathering and evaluation process.

In 1994, Lowell became one of the first police departments to receive a federal COPs (Community Oriented Policing programs) grant to install laptops and encrypted communication software in its patrol cars. These laptops give police officers instant access to CompStat-related data, including information about individuals, vehicles, dispatches, and the positions of all other patrol cars throughout the city. Officers are better informed, and resources are coordinated effectively.

### **Lowell CompStat meeting**

The Lowell Police Department holds its CompStat meeting once every two weeks.<sup>20</sup> The City is divided into three sectors: East, West and North. At each meeting, one of the sector captains presents an in-depth analysis of recent trends and developments in his sector, detailing specific cases when relevant. The three sectors rotate their presentation schedules on a regular basis. However, at each meeting, all of the statistics and maps are looked at, and often the topic of discussion shifts from one sector to the next, or to a citywide issue.

Throughout the meeting, a large projection screen displays an interactive street map of the city. The screen is hooked up to a computer, controlled by the department's crime analyst, who also prepares the data, maps and Summary Report for each meeting, using a Microsoft Access<sup>21</sup> database, MapInfo Professional and Microsoft Word for the written reports, which are distributed electronically before the meeting. The total system cost the Lowell Police Department approximately \$10,000 to install.<sup>22</sup> With the click of a mouse, any data stored in the computer's database can be displayed on the map, with icons representing the locations of incidents. The controller can easily zoom in on a particular part of the map for closer analysis, or look at the entire city. Multiple types of incidents can be displayed at once for comparison, and certain types of incidents can be broken down into smaller categories. The flexibility and ease of use of the software allows for fluid and spontaneous discussion. Everyone sees and hears the same things at the CompStat meeting, decreasing the need for sending memos back and forth between different sections of the department.

Although the scheduled presentation focuses mostly on the seven FBI index crimes, other types of incidents are looked at as well. For example, simple assaults do not fall under the FBI criteria,

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<sup>18</sup> From mission statement excerpt, quoted at <http://www.lowellpolice.com>

<sup>19</sup> <http://www.lowellpolice.com>

<sup>20</sup> Much of the information in this chapter was obtained during a visit to Lowell's CompStat meeting on December 12, 2002.

<sup>21</sup> Microsoft Access is a database management program packaged in the Microsoft Office software suite along with programs such as Word and Excel.

<sup>22</sup> The current version of MapInfo Professional retails from \$1,395; Microsoft Office XP Professional retails from \$349 to \$578; additional costs may include projection hardware and development of a city street address database.

but are looked at in the CompStat meetings. Another example is traffic accidents. During the winter months, traffic accidents may tend to increase due to weather conditions, and the LPD CompStat group takes a closer look at those accidents to see whether conditions can be improved in any “trouble spots” on the map. One suggestion during a recent CompStat meeting was to increase ticketing for parking too close to intersections, since the additional obstruction to visibility makes driving more hazardous during harsh weather conditions.

CompStat meetings generate lively discussion. Before the sector captain finishes his first point, questions emerge from the audience: “Do we know of any serial offenders in that area?” “Doesn’t that alleged victim have a history of false accusations?” “We’ve had a problem with logging domestic assaults properly because of the necessary paperwork, which could hinder our ability to respond to these incidents as best as we can.” It turned out that not everyone was aware of some of the consequences of improperly logging domestic assaults. Once the chief made it clear that it was not only a clerical issue, but also a safety issue, he instructed everyone to pass the information on to all of their subordinates and urge them to make the extra effort.

Although debates can be energetic, the atmosphere in the CompStat meetings in Lowell seems to be good-natured, unlike the reportedly heated interrogations in the New York Police Department. It seems that it is not necessary to berate someone who is underperforming. Using accurate data to expose problems to commanding officers and peers seems to provide enough pressure to improve performance.

Innovative problem solving is an integral component of the CompStat process. The brainstorming portions of the meetings encourage different ideas to be presented, and sometimes it turns out that the best solution is not simply to throw more patrol cars at a problem. For example, robberies were on the rise in one neighborhood. One officer pointed out that a local business establishment in the neighborhood had recently changed ownership. Another suggested that an officer discuss with the new owner the installation of a security camera outside of his establishment. Another officer suggested that since the Police Department owned a nearby property, it could install a camera there to keep an eye on the area. In this case, a small recording device could perform an important function effectively and less expensively than transferring police resources from one patrol area to another.

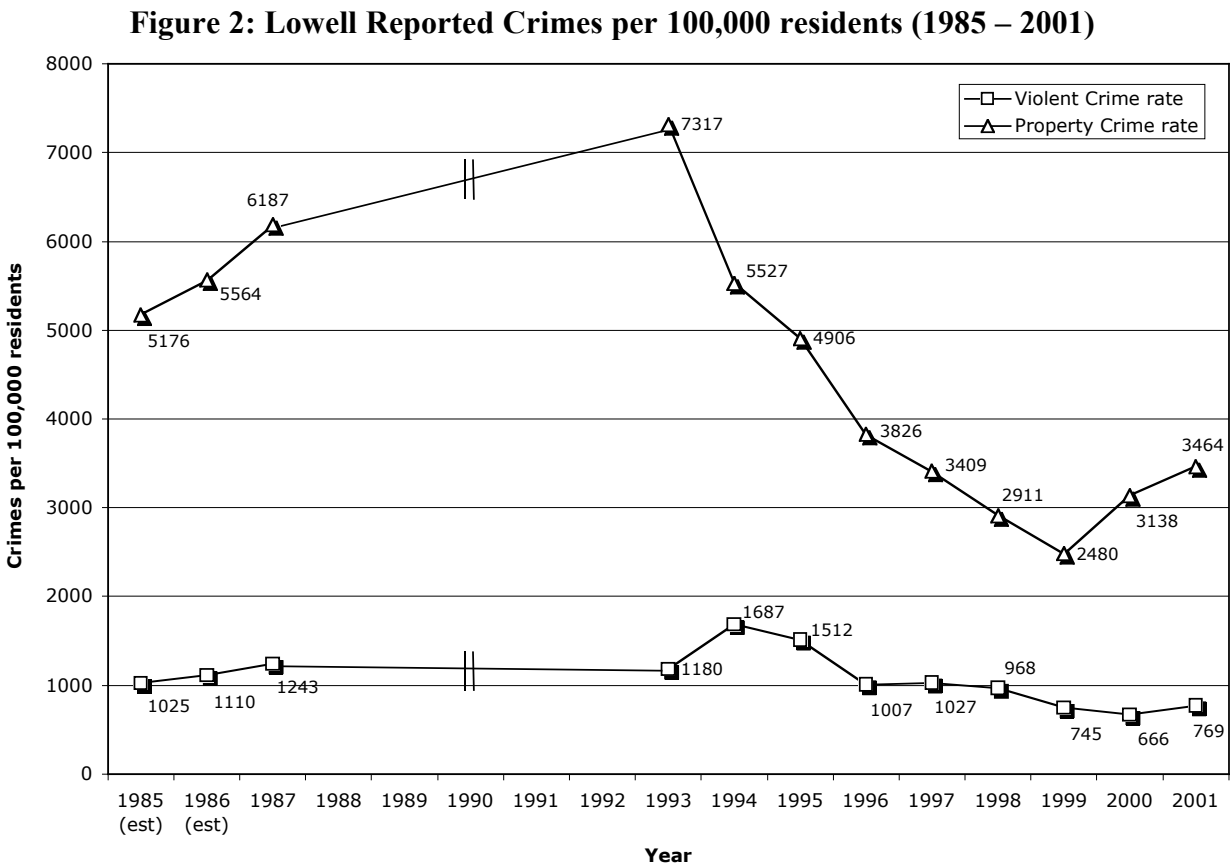
The CompStat program also encourages cooperation among different types of agencies. For example, members of the Probation Department are included in meetings because they have more information about recently released convicts than the Police Department does. This information is useful in trying to identify possible perpetrators of crimes or where crimes might occur. Other departments represented at CompStat meetings include the UMass-Lowell Police Department and the Housing Authority. This multi-agency approach allowed the head of the West Sector to identify a house where alleged perpetrators of crimes and their associates were staying. In conjunction with several agencies, including Health, Housing, and Motor Vehicles, the police were able to condemn the building, evict the tenants (who were occupying the premises illegally), and tow several unregistered vehicles parked on the premises. The police effectively broke up a crime ring by removing its base of operation and means of transportation, even before they could get enough evidence to make any arrests. In addition, if the evicted people showed up on the

premises, the police would have grounds for arresting them. After these actions were taken, the crime spree stopped.

The Lowell Police Department demonstrates all of the elements of the CompStat model: data are up to date; strategies are developed cooperatively; resource allocation is flexible; and assessment efforts are sustained. In addition, the Lowell Police Department emphasizes additional practices, which they have integrated into their CompStat process: cooperation among departments, community-oriented policing, and the use of technology in the field.

### Results

Again, while we cannot attribute crime reduction to any one factor, it should be noted that crime rates in Lowell have dropped since the introduction of CompStat in 1996. Figure 2 shows Lowell’s reported crime rates from 1985 to 2001.<sup>23</sup> During the three years prior to the implementation of CompStat in Lowell (1993-1996), violent crimes fell 14.7% (from 1,180 to 1,007), and property crimes fell 47.7% (from 7,317 to 3,826). During the 3 years after CompStat began (1996-1999), violent crimes fell 26.0% (from 1,007 to 745), and property crimes fell 35.2% (from 3,826 to 2,480). It should be noted, however, that since 1999 property crimes in Lowell have risen 39.7%.



Sources: Bureau of Justice Statistics, Federal Bureau of Investigation.

<sup>23</sup> Figures from 1988 through 1992 were not reported. Figures from 1985 and 1986 are Research Bureau estimates based on partial-year reports.

## **VI. Baltimore CitiStat**

In 2000, the City of Baltimore, under Mayor Martin O'Malley, developed a citywide performance assessment program based on the CompStat model, called CitiStat. The CompStat process, as described in section III, was applied to several municipal services, such as police, fire and housing. Bi-weekly CitiStat meetings are used not only to hold managers of the various municipal services accountable, but also to coordinate efforts across departments in order to improve delivery of services to residents as well as save money wherever possible.

CitiStat works with a centralized "311" call center, called CitiCall, similar to "911" emergency and "411" information call centers. CitiCall is used to handle all non-emergency requests for municipal services, eliminating the need to remember multiple phone numbers for separate agencies. The "311" operator determines to which department he should send a particular request, and logs it into customer request management (CRM) database and tracking software, called CitiTrack, similar to the request-handling systems used by large corporations. ("311" call centers are being implemented in communities around the country, such as Dallas, Houston, Chicago, San Jose, Chattanooga, and New York City, which expects to have a "311" call center operational within a few months.<sup>24</sup>) CitiCall employs 46 staff members, who handle about 15,000 calls per week.

### **The CitiStat meetings<sup>25</sup>**

Baltimore's population is approximately 600,000. Its annual budget is around \$1 billion. Baltimore had seen increasing budget deficits in recent years, and its projected shortfall in FY01 was \$12.5 million. There are currently 11 agencies and departments participating in CitiStat,<sup>26</sup> and plans are to integrate all municipal services into this process. In many ways, Baltimore's CitiStat is functionally similar to New York's CompStat. Since the program is relatively large, it has spawned individual agency programs, such as DPWStat and HealthStat, as well as several interagency initiatives, such as LeadStat and DrugStat. These programs were developed to reduce the incidence of lead poisoning and drug use in the city. The program is similar to New York's CompStat, in that it is the fear of having failures exposed in front of the mayor that reportedly promotes success in the CitiStat program.<sup>27</sup>

The CitiStat Room contains two large projection screens, a podium with two computer monitors facing the speaker, a row of seating for a panel of city executives including the mayor, a control booth, and two gallery seating sections, occupied mostly by representatives from the eleven participating departments. A small team of four staffers collects data from the participating agencies, analyzes it, and creates maps and charts for presentation at the meeting.

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<sup>24</sup> "Dialing 311: One Call to Fit All, City Says," *The New York Times*, January 19, 2003.

<sup>25</sup> For more information on Baltimore's CitiStat program, see the CitiStat website, <http://www.ci.baltimore.md.us/news/citistat/index.html>

<sup>26</sup> Police Department, DPW - Solid Waste, DPW - Water & Wastewater, DPW - General Services, Department of Transportation, Department of Housing & Community Development, Housing Authority of Baltimore City, Department of Health, Fire Department, Department of Recreation & Parks, and KidStat.

<sup>27</sup> "Baltimore Tutorials," *The Boston Globe*, September 29, 2002, <http://www.ci.baltimore.md.us/news/presscoverage/BaltimoreTutorials.html>.

By using off-the-shelf software, the total startup cost for CitiStat was kept to \$20,000.<sup>28</sup> The FY01 operating cost of CitiStat, including the start-up cost, was \$285,000. (This figure does not include CitiCall's operating budget, totaling \$4 million.)

CitiStat measures the performance of each department separately. It encourages greater accountability to the Mayor, and ultimately to the people of Baltimore. If those in charge do not respond to problems that are addressed at the meetings, they will eventually be removed from their positions.<sup>29</sup> The main CitiStat meeting is less a forum for cooperative problem solving than for identifying trends and performance in the various departments. Once that is done, as in the NYPD, departments can work internally or develop inter-departmental solutions to problems, such as LeadStat and DrugStat, mentioned above.

The success rate of the CitiStat program has been mixed, particularly with regard to its integration with CitiCall, although that process is improving. The call center is often blamed for failures, since it is the point of contact between the City and its citizens. However, according to *The Baltimore Sun*,<sup>30</sup> the call center itself is doing an excellent job of handling calls and logging requests. To the extent that there is a breakdown, it occurs after the initial phase, once the requests are passed on to the municipal department that is supposed to answer the request. Sometimes a job is flagged as "abated" or "completed" when in reality the responsible agency has only taken the first step in resolving it. For example, a complaint regarding piles of trash near a house was sent to the housing department; they sent out an inspector, who wrote a citation, and later logged it in the CitiTrack computer system as "abated." When the caller called back in a few days to ask what progress had been made, the operator told him that the problem had been "abated," as signified by the display on the operator's computer screen. However, the caller could see from his window that the trash was still there. According to officials, the problem is the terminology being used, since the case is being pursued through established procedures, but the information that is relayed back into public records may be misleading.<sup>31</sup>

Another common problem is discerning who has jurisdiction over a case when two agencies' jurisdictions overlap. In one example, reported in *The Baltimore Sun*,<sup>32</sup> someone called in a complaint about an abandoned vehicle that was being used by drug dealers as a base of operations. Since two tires of the vehicle were in an alley, and two were in a vacant lot, neither of the two "partially" responsible agencies, Transportation and Housing, could actually remove the vehicle.

Such problems do not arise out of any defects in CitiCall, but rather from difficulties in departmental relations, jurisdiction and bureaucratic procedures. CitiStat, still in its early years of development, is addressing these problems. It is possible, however, that the combination of

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<sup>28</sup> CitiStat website.

<sup>29</sup> Two recent cases of lack of response to CitiStat requests are the firings of the city parks director in July 2002 and the head of the city's Bureau of Water and Wastewater Treatment in February 2002: "Running the City by the Numbers," *The Baltimore Sun*, July 14, 2002.

<sup>30</sup> "City's 311 complaint center criticized about follow-ups." *The Baltimore Sun*, November 26, 2002.

<sup>31</sup> Ibid.

<sup>32</sup> Ibid.

CitiStat and CitiCall has allowed many such issues to be identified, which in the past would not have been recognized.<sup>33</sup>

## Results

Although many problems still exist, as described above, delivery of services has improved, and responses to citizen complaints are faster and more efficient than they were prior to 2000, according to city officials.<sup>34</sup> For example, Baltimore instituted a “48-hour pothole guarantee” and has maintained a better than 99% success rate in meeting that commitment. Worker absenteeism was down by two-thirds in FY01.

Although the budget is only a part of the focus of CitiStat, it offers a glimpse of how efficiently a city is managed. As noted above, Baltimore’s projected budget shortfall for FY01 was \$12.5 million. According to the Baltimore Mayor’s Office, the total savings and increased earnings for FY01 due to strategies developed through CitiStat was \$13.2 million. In FY02, Baltimore saved another estimated \$30 million, including about \$10 million in reduced overtime, \$5 million in reduced operational costs, and \$4 million in increased revenue streams.<sup>35</sup>

**Table 1: FY01 Financial Impact of Baltimore CitiStat**

<b>Savings or Earnings Item</b>	<b>Amount Saved</b>
Reduced overtime	\$6,000,000
Reduced absenteeism and accident time utilization	\$1,232,211
Instituted disciplinary standards for absenteeism	
Examinations for extended disability leave	
Increased revenue streams	\$3,647,535
Sale of fleet assets	
Increased EMS revenue collections	
Instituted water turn-off program	
Revised small hauler guidelines	
Elimination of water work order backlog	
Stadium medics negotiated	
Reduced operational costs	\$1,310,664
Reduced fleet	
Reduced employee take-home privileges	
Eliminated unnecessary vehicle leases	
Terminated costly and inconsistent initiatives	\$1,025,000
Terminated Comprehensive Building Study project	
Terminated installation of hand scanner units in buildings	
<b>TOTAL</b>	<b>\$13,215,410</b>

Source: Baltimore Mayor’s Office.

<sup>33</sup> The problem of agency jurisdiction was one that the Research Bureau identified through its ComNET<sup>SM</sup> project, or Computerized Neighborhood Environment Tracking. ComNET<sup>SM</sup> is part of the Research Bureau’s municipal and community performance measurement project funded with a grant from the Alfred P. Sloan Foundation. Volunteers systematically survey their neighborhoods using handheld computers and digital cameras to record a wide range of unsatisfactory physical conditions that require remediation. The data are then submitted to the department responsible for appropriate action. The same neighborhoods are re-surveyed each year to track the status of the problems identified and to record any new problems. It was partially through these ComNET<sup>SM</sup> surveys that overlapping jurisdiction for abandoned vehicles became apparent. The three agencies involved developed a new process for removal of abandoned vehicles and established a hotline for reporting abandoned vehicles.

<sup>34</sup> “City’s 311 complaint center criticized about follow-ups.”

<sup>35</sup> <http://www.ci.baltimore.md.us/mayor/3year/govt.html>.

## **VII. Chattanooga Office of Performance Review**

In July 2002, the City of Chattanooga, Tennessee, began implementing a CitiStat-like program called the Office of Performance Review (OPR). Mayor Bob Corker hired a former New York City official, David Eichenthal, as the Internal Auditor for the City and the Director of the OPR for an annual salary of \$97,500. According to Eichenthal (at the time of his appointment), “The delivery of services in Chattanooga is pretty good, but it can always be better.”<sup>36</sup>

The OPR’s Preliminary Plan<sup>37</sup> calls for a four-pronged approach to improving the City’s performance while reducing its costs and increasing its revenues. It has some elements of CompStat, but includes components that are not part of the original CompStat design. The four elements to the strategy are (1) a call center, (2) an internal audit process, (3) grants coordination, (4) and continuous performance measurement. Currently, in addition to the general development of this system, the OPR is investigating overtime spending in municipal agencies and pursuing grants to reduce homelessness.<sup>38</sup> The OPR does not have any set plans for a regular CompStat-like meeting, although this has not been ruled out, but regular data collection and analysis similar to the other three cities discussed in this report is underway.

### **Call Center**

Like Baltimore, Chattanooga’s OPR includes plans for a centralized 311 Call Center. Motorola will install the Call Center at a cost of \$268,000, with maintenance cost of \$13,000 per year. The Call Center is scheduled to be online in February 2003. Eichenthal predicts that the OPR and 311 Call Center will more than pay for themselves after about 18 months of operation. Rather than hiring new employees, the City will reassign them from several other departments. These employees will undergo training to work effectively with the public. In addition to customer service training, OPR staff and Call Center representatives will spend a series of “work days” in other City agencies. The goal is to integrate the Call Center with other City agencies.<sup>39</sup>

### **Internal Audit**

The OPR is planning to create an Audit Advisory Board, made up of up to five individuals who do not “personally or through their firm [do] business with the City.”<sup>40</sup> The Audit Advisory Board would be responsible for reviewing an annual financial audit performed by an independent outside agency, an internal annual OPR audit, and draft internal audits.

### **Grants Coordination**

The OPR is seeking to improve the City’s grant application capability, to increase funding for municipal programs and services. Currently the Chattanooga Police Department is the only City agency with an in-house capacity to regularly find and apply for outside grants. OPR has developed a three-step grant management program to increase outside funding for the City: OPR will (1) publish a regular email newsletter regarding federal and State funding opportunities, (2)

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<sup>36</sup> “New office studies city department efficiency,” *Chattanooga Times Free Press*, August 7, 2002.

<sup>37</sup> Memorandum from David Eichenthal to Bob Corker, “Preliminary Plan for the Office of Performance Review,” August 12, 2002.

<sup>38</sup> “Officials target overtime,” *Chattanooga Times Free Press*, November 24, 2002; “City to pursue grants to reduce homelessness,” *Chattanooga Times Free Press*, December 3, 2002.

<sup>39</sup> “Preliminary Plan.”

<sup>40</sup> *Ibid.*

develop a partnership with the local Congressman to promote the award of federal grants to city agencies, and (3) establish a tracking system as well as a performance measure for grant applications. All agency grant applications will go through the OPR.

### **Performance Measurement**

Performance measurement in Chattanooga will resemble the process in Baltimore. In addition to the annual auditing process, the OPR is working with City agencies to develop performance indicators that will be tracked on a bi-weekly basis. Data are already being collected by the agencies and submitted to the OPR, where they are analyzed and provided to the Mayor and agency heads for review and discussion. The next phase of the process is an intense period of identifying the performance indicators that are not currently measured but should be. Data from the Call Center on agency responsiveness to citizen complaints will also be included. The City's Information Services department will then develop a data collection process for each indicator to ensure data reliability.

### **Results**

Since Chattanooga's OPR is in its early stages of development, there are few results to be reported. However, there are some partial data relevant to OPR's early efforts. Total citywide overtime expenditures between July 1999 and November 2002, according to internal City statistics, were about \$11.3 million. The OPR reported that in September 2002, the City was on track to increase its FY03 overtime spending 17%, or by \$2.9 million, over FY02. The OPR promised City agencies a percentage of the savings if those agencies reduced their overtime spending without hurting performance. The funds could be used for technology upgrades to further increase efficiency. As a result of these incentives, as of November 2002, the OPR had evidence that overtime would increase by 9.5% over FY02 rather than the 17% originally projected.<sup>41</sup>

## **VIII. Worcester Police Department**

Although the Worcester Police Department does not have an official CompStat program, it has implemented some practices that are consistent with the CompStat approach. Daily and weekly statistical crime analyses inform officers of current trends. Sudden changes in the data may indicate a short-term surge in activity to which police officers can respond promptly. Although the WPD does not yet use software that can plot incidents on a map, the written reports are geographically based, with the City divided into eight Police Statistical Zones, which are further divided into 58 Areas. In addition to crime analysis, a budget analyst tracks budgetary items such as overtime and capital projects. This is very similar to the first step in the CompStat process. However, the goal of this process in Worcester differs from CompStat in that the data are not used specifically to hold officers accountable for performance, but rather are intended simply to give as much information to officers as possible about what has been happening and where, to help them respond better to new incidents.

The WPD holds staff meetings about once per month to go over items such as crime trends, offender trends, and recent parolees. These meetings are not like the CompStat accountability

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<sup>41</sup> "Officials target overtime."



meetings, but are more along the lines of organizational meetings, used for information exchange and planning. The meetings may be postponed for several weeks if there are no pressing issues.

There are two dimensions to CompStat: crime analysis and command structure. The WPD's crime analysis seems to be producing timely intelligence, which is the most critical part of a CompStat program. The major difference between Worcester's crime analysis and CompStat is that Worcester does not yet use crime mapping. The reason is the WPD does not yet have a GIS database with all city street addresses necessary for crime mapping. Completing the database would require several months' work. While mapping helps to visualize the crime analyst's data, the lack of it does not represent a major obstacle to implementing CompStat if the Police Department so desired.

The second issue is the command structure of the WPD, which differs from CompStat. While CompStat-run departments are organized geographically, such as by precinct in New York or by sector in Lowell, the WPD is organized by shift. Three shift captains are responsible for the entire city during their own shifts. While this does not allow for the usual CompStat method of enforcing accountability using geographically based crime analysis, those in charge of the shifts could be held accountable for what occurs during those shifts. Teamwork among the captain, lieutenants, and sergeants in charge of a shift could allow for the implementation of CompStat with a shift structure.

While the Police Department has investigated the possibility of reorganizing its command structure geographically into three areas (rather than the three current shifts), there seem to be two main challenges in moving to a geographical structure. One may be the cost of reorganizing the communication system, which is currently divided into two communication areas for "911" emergency dispatch, into three areas. This could require a reorganization of personnel as well as hardware at some cost. The second challenge with such a transition, according to Police Department officials, would be collective bargaining issues affected by changing from a shift structure to a geographic-based system. As noted above, however, the current command structure, according to police officials, does not preclude implementation of CompStat if the WPD decided it would be beneficial.

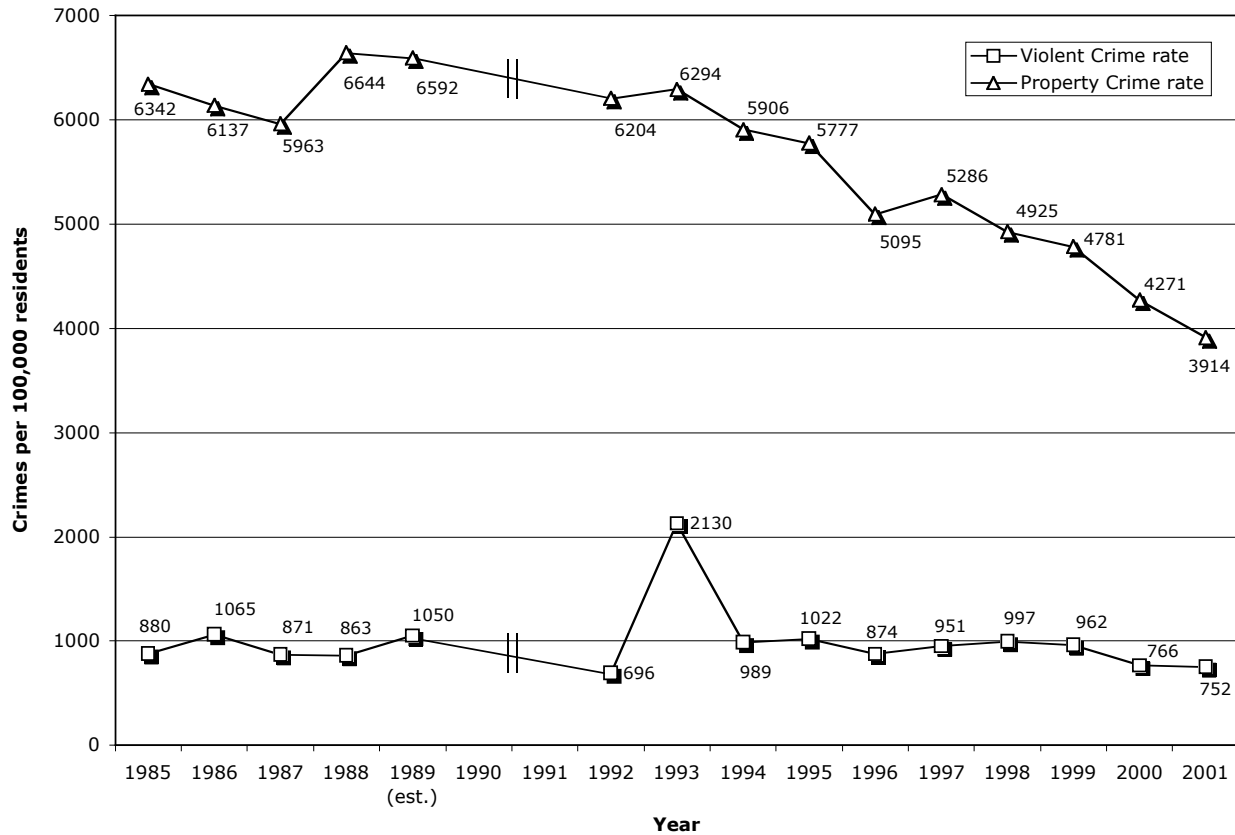
## **Results**

Figure 3 below shows Worcester's violent and property crime rates per 100,000 residents between 1985 and 2001.<sup>42</sup> From 1994 (the year that CompStat began in New York City) to 2001, violent crime and property crime in Worcester declined 24.0% (from 989 to 752) and 33.7% (from 5,906 to 3,914), respectively. During the same period, in New York City, these crimes fell 54.4% and 123.8%, respectively, and in Lowell they fell 54.4% and 37.3%, respectively.

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<sup>42</sup> Figures from 1990 and 1991 were not reported. Figures from 1989 are Research Bureau estimates based on partial-year reports.

**Figure 3: Worcester Reported Crimes per 100,000 residents (1985 – 2001)**



Sources: Bureau of Justice Statistics, Federal Bureau of Investigation.

**IX. Conclusions**

It is clear that crime rates have dropped dramatically in New York City and Lowell since CompStat was introduced in those cities, but crime rates have dropped in Worcester as well. Does Worcester stand to gain from implementing CompStat? An analysis of crime rates in 19 other cities of comparable size to Worcester, four of which have CompStat, provides some useful guidance. Tables 2a and 2b below compare crime rates in CompStat cities before and after its implementation with crime rates in cities without CompStat.

Violent crime dropped in 11 of the 16 non-CompStat cities, and very modestly in three of those (Erie, New Haven and Yonkers). Property crime decreased in 15 of the non-CompStat cities, in five of those by less than 20%. In three of the four cities that adopted CompStat, however, violent crime and property crime decreased substantially. While none of these data provide definitive evidence that the introduction of CompStat in Worcester would lead to dramatically lower crime levels, it does seem that some of the methodology of CompStat might provide better information for police that could lead to some reductions in crime.

## Crime Rates for 20 Cities: Population 100,000 – 300,000

**Table 2a: Changes in Crime Rates\* for Cities with CompStat**

<b>Violent Crime Rate**</b>							
<b>City</b>	<b>Pre-CompStat</b>			<b>Post-CompStat</b>			<b>1985-2001</b>
	<b>1985</b>	<b>Start of CompStat</b>	<b>Percent Change</b>	<b>Start of CompStat</b>	<b>2001</b>	<b>Percent Change</b>	<b>Percent Change</b>
Hartford, CT (1996***)	1919.1	1640.6	-14.5%	1640.6	1250.5	-23.8%	-34.8%
Lowell, MA (1995)	1024.7	1511.7	47.5%	1511.7	769.4	-49.1%	-24.9%
Newark, NJ (1996)	2889.7	3276.8	13.4%	3276.8	1358.1	-58.6%	-53.0%
Stamford, CT (1997)	471.0	410.2	-12.9%	410.2	219.1	-46.6%	-53.5%

<b>Property Crime Rate</b>							
<b>City</b>	<b>Pre-CompStat</b>			<b>Post-CompStat</b>			<b>1985-2001</b>
	<b>1985</b>	<b>Start of CompStat</b>	<b>Percent Change</b>	<b>Start of CompStat</b>	<b>2001</b>	<b>Percent Change</b>	<b>Percent Change</b>
Hartford, CT (1996)	11099.6	8900.1	-19.8%	8900.1	7520.8	-15.5%	-32.2%
Lowell, MA (1995)	5175.7	4905.9	-5.2%	4905.9	3463.7	-29.4%	-33.1%
Newark, NJ (1996)	9186.5	9803.4	6.7%	9803.4	5406.0	-44.9%	-41.2%
Stamford, CT (1997)	5478.9	3704.4	-32.4%	3704.4	2390.6	-35.5%	-56.4%

\* Crimes per 100,000 population.

\*\* Does not include forcible rape, due to a procedural error in Worcester's reported data.

\*\*\* Last year before CompStat.

Sources: Bureau of Justice Statistics, Federal Bureau of Investigation.

**Table 2b: Changes in Crime Rates\* for Cities without CompStat**

<b>City</b>	<b>Violent Crime Rate**</b>			<b>Property Crime Rate</b>		
	<b>1985</b>	<b>2001</b>	<b>Percent Change</b>	<b>1985</b>	<b>2001</b>	<b>Percent Change</b>
Allentown, PA	337.3	536.2	59.0%	5014.4	4329.6	-13.7%
Amherst, NY	208.1	72.9	-65.0%	2441.7	1732.5	-29.0%
Bridgeport, CT	1494.0	1311.9	-12.2%	9518.1	4455.3	-53.2%
Elizabeth, NJ	996.1	684.4	-31.3%	6629.1	5195.3	-21.6%
Erie, PA	458.2	418.2	-8.7%	4152.5	3645.6	-12.2%
Jersey City, NJ	1459.9	1141.9	-21.8%	6283.4	3996.6	-36.4%
Manchester, NH	185.9	187.1	0.6%	5567.9	2992.7	-46.3%
New Haven, CT	1627.6	1495.2	-8.1%	9863.3	6377.2	-35.3%
Paterson, NJ	1279.3	855.3	-33.1%	6417.9	4454.2	-30.6%
Providence, RI	1062.4	759.5	-28.5%	8744.6	7265.6	-16.9%
Rochester, NY	1160.3	717.2	-38.2%	8027.6	6582.4	-18.0%
Springfield, MA	1151.6	2079.8	80.6%	4022.1	6230.8	54.9%
Syracuse, NY	566.6	1029.3	81.7%	6702.9	5321.3	-20.6%
Waterbury, CT	361.3	470.9	30.3%	6258.5	5863.6	-6.3%
Worcester, MA	879.7	752.3	-14.5%	6342.0	3914.2	-38.3%
Yonkers, NY	497.6	468.3	-5.9%	4303.1	2282.5	-47.0%

\* Crimes per 100,000 population.

\*\* Does not include forcible rape, due to a procedural error in Worcester's reported data.

Sources: Bureau of Justice Statistics, Federal Bureau of Investigation.

In light of these findings, the Research Bureau believes that the City Manager should consider the following:

- Complete the GIS database so that the WPD can map incidents of crime. Student interns from one of the local colleges, such as Clark University, Worcester Polytechnic Institute, or Holy Cross, which have extensive GIS programs, could complete the GIS database and perhaps be involved in maintaining it under faculty supervision.
- Institute regular meetings like those in Lowell to discuss the crime analysis data and develop strategies for addressing problems.
- Investigate the possibility of changing the Police Department's command structure from a shift-based to a geographic-based structure, which would enable those in charge of a particular geographic area to address incidents in that area. The main challenges to this change are the conversion of the communications structure from two to three areas, and issues related to collective bargaining. One solution to the first problem may be to divide the command structure into four geographical patrol areas, two per communications area, circumventing the need for reorganizing the communications structure. A lieutenant could be placed in charge of each area, responsible for all shifts patrolling this area. This is similar to the way that the Lowell Police Department moved from a shift-based command structure to a geographically based one.<sup>43</sup> The shift command remained with captains at the same time that lieutenants were put in charge of the geographical sectors. As shift captains retired, the new captains were placed in charge of a geographical area rather than a shift. Eventually all patrol operations became geographically based. While this change would be beneficial to a CompStat program, as noted above, CompStat could work with the current command structure.

To improve the performance of all municipal departments, the City Manager should consider the following:

- Implement a citywide performance measurement program similar to those in Baltimore and Chattanooga. Such a program would be an expansion of the work many neighborhood associations and city agencies are already doing with the Research Bureau to measure municipal and community performance as part of the ComNET<sup>SM</sup> project. Under this project, neighborhood residents record physical problems in their neighborhoods with handheld computers and digital cameras. The results are reported to the appropriate city agencies for remediation, and neighborhoods are surveyed each year to determine if problems have been remediated. Monthly CitiStat meetings would allow the city manager and department heads to hold their subordinates accountable for performance in a timely fashion.
- Implement a non-emergency service call center similar to Baltimore's CitiCall and Chattanooga's "311" Call Center. This plan should work in conjunction with an already developing performance measurement and accountability program, as outlined above. A call center would simplify the process for lodging complaints and service requests with city agencies. The call center would also improve efficiency and execution of service requests, and enable citizens to follow up on their calls.

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<sup>43</sup> "National COPS Evaluation: Lowell, Massachusetts," [http://www.ncjrs.org/nij/cops\\_casestudy/lowell4.html](http://www.ncjrs.org/nij/cops_casestudy/lowell4.html).

## **UPCOMING RESEARCH BUREAU EVENTS:**

### **Forum: Charter Schools: Their Future in Massachusetts**

Speakers: David Driscoll, Ed.D.  
Commissioner, Massachusetts Department of Education

Brett Peiser  
Founder/Executive Director  
South Boston Harbor Academy Charter School

Mark C. Smith, Ed.D.  
Superintendent, Framingham Public Schools

Moderator: Henry M. Thomas, III  
Vice Chair, Massachusetts Board of Education

Wednesday, February 26, 2003  
7:45 a.m. – 9:15 a.m.  
Becker College  
Weller Academic Center  
61 Sever St. Worcester  
(Parking available on Roxbury Street)

### **Forum: The State of the City's Finances: How will Worcester balance its budget in FY04?**

Speakers: Robert M. Costrell, Chief Economist & Senior Policy Manager  
Executive Office of Administration & Finance

James A. DelSignore, Auditor  
City of Worcester

John P. Prankevicius, Budget Director  
City of Worcester

Moderator: Rita A. Moran, Vice President of Business Services  
Massachusetts Electric Company  
Worcester Regional Research Bureau Executive Committee

Thursday, March 20, 2003  
7:45 a.m. – 9:15 a.m.  
Clark University  
Higgins University Center  
Grace Conference Room  
950 Main St. Worcester  
(Parking available on Maywood Street)