Process, Statistical, and Comparative Analysis of Routine Claims for Damages against the City of Milwaukee

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Prepared for the City of Milwaukee, Department of Administration,
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Foreword

Students in the Master of Public Affairs program in the Robert M. La Follette School of Public Affairs at the University of Wisconsin–Madison produced this report for the City of Milwaukee's Department of Administration's Budget and Management Division. The opinions and judgments presented in the report do not represent the views, official or unofficial, of the La Follette School or of the clients for whom the students prepared the report.

The authors are enrolled in the Public Affairs Workshop, Domestic Issues, the capstone course in their graduate program. The La Follette School offers a two-year graduate program leading to a Master of Public Affairs or a Master of International Public Affairs degree. The workshop provides practical experience applying the tools of analysis acquired during three semesters of coursework to actual issues clients face in the public, non-governmental, and private sectors. Students work in teams to produce carefully crafted policy reports that meet high professional standards within the timeframe of a single academic semester. The reports are research-based, analytical, and when appropriate, evaluative.

This report would not have been possible without the encouragement and leadership of the City of Milwaukee's dedicated employees. A University of Wisconsin–Madison Engage grant for collaborative work from the Division of Information Technology supported additional costs of this report, including travel costs of meeting with clients. The report also benefited greatly from the support of the staff of the La Follette School. Outreach Director Terry Shelton, along with Kari Reynolds, Mary Mead, and Gregory Lynch, contributed logistical and practical support. Karen Faster, La Follette Publications Director, edited the report and shouldered the task of producing the final bound document.

This report was generated primarily for the educational benefit of its student authors. The purpose of the project was to improve their analytical skills by applying them to an issue with a substantial policy or management component. This culminating experience is the ideal equivalent of the thesis for the La Follette School degrees in public affairs.

Dr. Susan Webb Yackee
Assistant Professor of Public Affairs and Political Science
May 2009

Acknowledgments

This work would not have been possible without the cooperation and support of a number of people in Milwaukee, across the country, and at the University of Wisconsin–Madison. We worked most closely with Eric Pearson of the City of Milwaukee Budget and Management Division, whose leadership and guidance were crucial from the beginning. John Ledvina, formerly of the division and now with the Milwaukee Police Department, was our liaison with the software vendor to provide our claims data. Steve Carini and Bob Overholt, claims adjusters in the Milwaukee City Attorney's office, walked us through the claims process and provided a good deal of background information.

We received further assistance from a number of others at Milwaukee City Hall, including Vincent Moschella and Jan Smokowicz with the City Attorney's office and Mary Reavey of the City Assessor's office.

Our wide-ranging research put us in contact with a variety of officials and experts. We would especially like to thank the following municipal staff for their assistance in our benchmarking work: Beth Carpenter, Green Bay, Wis.; Kate DeSimone, Pittsburgh, Pa.; Alexis Jones, Cleveland, Ohio; Justin King, Baltimore, Md.; Kimberly Roberson, Cleveland, Ohio; Hilary Ruley, Baltimore, Md.; and Eric Veum, Madison, Wis. Additional information was provided by Dawn Foeller, Green Bay, Wis.; Edward Hopkins, Wisconsin State Climatology Office, Trudy Hutchinson, Cleveland, Ohio; and David Pilsner, Madison, Wis. We received useful insights from Shirley Lenzly, Cincinnati, Ohio; Jonathan Mayes, Indianapolis, Ind.; and Dennis Tweedale, League of Wisconsin Municipalities.

Finally, this report would not have been possible without the guidance of Professor Susan Webb Yackee, the sharp red pen of Karen Faster, and the faculty and staff of the La Follette School of Public Affairs.

We thank those mentioned and all who worked with them to provide the information and resources on which this report is based. Responsibility for any errors, and for the opinions expressed herein, is entirely ours.

Daniel Bush, Don Hynek, Thomas Robinson, and Aaron Varner
May 2009

Executive Summary

Damage claims and settlements are a complex and variable cost of administration for the City of Milwaukee. As in most jurisdictions of its size, the City self-insures for claims at a cost of roughly half a million dollars per year. Is this cost reasonable? Can primary drivers be identified? Are there cost savings to be gained from measures that reduce the incidence of claims or improve claims procedures—and if so, what measures should be considered?

This report answers these questions for the City by providing a quantitative analysis of routine claims and settlement costs, using data from the City Attorney's ProLaw database for the period 2004-2008. It also provides a qualitative analysis of claims administration practices employed by the City. To assess the relative importance of claims costs, we obtained data from five cities generally comparable to Milwaukee and used them to benchmark the number and cost of legal claims.

We find that the City of Milwaukee has an effective, established process for managing claims. We find that the only clear trend or indicator in the five years of claims data available is weather, particularly large snowfalls. Our review of comparable cities suggests that Milwaukee's claims costs are not excessive, controlling for population and the size of government. We conclude that the City appears to be reasonably successful in controlling key drivers of claims costs and find no obvious opportunities for the City to achieve major cost savings in this area.

Based on these findings, we recommend that the City:

1. Conduct a more detailed trend analysis in three to five years.
2. Evaluate claims management technology.
3. Review self-insurance options.

Part 1: Introduction

The City of Milwaukee provides a variety of services for its residents, all of which expose it to claims for liability or damages. Claims for monetary damages arising from this sort of everyday government activity are the subject of the data mining analysis undertaken here. This study assesses the volume, size, and characteristics of claims, with the goal of determining whether the volume of claims is reasonable, and whether changes could reduce the volume or costs of claims or to improve the administration and management of the underlying risk factors.

We find that in a typical year, 1,000 "routine" claims are filed with demands totaling $2 billion. The City makes full or partial payment through its normal claims process on a quarter of those claims, at an average annual cost of less than $500,000. Claims arise from accidents during the provision of all sorts of city services. Incidents that result in claims include accidents involving city vehicles, damage from snow plowing, and sewer backups into homes and business. Management and settlement of these claims is a complex and variable cost of city administration.

Like most large cities, Milwaukee self-insures for all these risks, bearing the direct cost of these claims and paying them out of general revenues (MacManus, 1997). It falls to the City Attorney's office to administer claims against the City, its agencies, employees, and contractors. The City Attorney's staff are obligated to ensure that just and fair compensation is provided when complainants are actually harmed by actions of the City or its employees. They must also protect the best interests of the City as a whole, defending it and its residents from excessive, unfounded, or fraudulent claims, and assuring that the city is not held responsible for contractors' accidents or misdeeds.

There is a perception that governments are a prime example of a "deep pocket" defendant (MacManus, 1997, p. 28). The financial target represented by their taxing authority leaves government entities at special risk for excessive or unfounded claims. Our system of civil law requires defendants to expend resources in defense of any and all torts, even when plaintiffs with few countervailing costs bring them. The City allows any resident to file a claim without the assistance of an attorney, minimizing the cost of access to the claims process. While there are valid equity reasons for doing so, there are also associated costs.

The scope of our analysis is limited to "routine" claims and lawsuits, which City staff define as those filed and resolved within the normal claims process. Two classes of claims resolved through different processes are not considered "routine," even though they are initiated through the same process as routine claims. Likewise, any payments outside the routine claims process—particularly awards arising from litigation—are beyond the scope of the analysis requested. This means we exclude the majority of funds paid out of the City's Damages and Claims Account, from which an average of $2.5 million per year has been paid during fiscal years 2004-2008 (Ledvina and Pearson, personal communication, 2009). We find that a total of $2.2 million has been paid out against all routine claims filed within that same five-year period.

While those figures are not directly comparable—the former is based on date of payment, the latter on date of filing—they illustrate how much of the fiscal impact of claims is excluded from the scope of this study as defined by the City.

To place these costs in context, we provide a broad comparison of claims data from Milwaukee to data obtained from five other cities. We intend, in this benchmarking effort, to assess whether Milwaukee has a greater or lesser exposure to legal claims than other comparable cities, and whether the City is more or less cost-efficient than comparable cities at managing legal claims liabilities.

We identify three research questions to be addressed in this report, one primary and two secondary questions. Our analysis provides some answers to these questions and recommends avenues for further investigation.

Primary question: What trends can be identified among routine damage claims against the City of Milwaukee during the period 2004-2008?

We find that extreme weather, particularly snowfall, is highly predictive of the volume of claims filed in a given month against the Department of Public Works. There are no other clearly identifiable trends in claims volume or payment. This lack of trends over time is a positive result; it implies that routine claims are stable and generally predictable. However, the data do not permit us to identify or evaluate specific causal factors, or detect trends or changes in the volume of claims, the resolution of claims or claims costs.

Secondary question: What benchmarks or data from comparable cities are available or can be developed to help the City better understand the volume and cost of claims?

We find no evidence that the City experiences an unusual volume or cost of claims. Our analysis involved collecting data directly from five comparable cities and making broad comparisons relative to population, budget, and workforce. Resources in this area of public policy are limited, with virtually no peer-reviewed literature or publicly available data.

Secondary question: Based on a review of the claims process, trend analysis of claims data, and benchmarking of comparable cities, how can the City improve its management of claims?

We find that the claims process functions effectively within the bounds prescribed by law. Certain strategies may help the City improve the quality of data collected or speed the resolution of claims. Because the data did not reveal any specific causal factors, we are not able to suggest work or employment practices that would reduce the volume or cost of routine claims.

Throughout this report, any information presented in tables or figures is based on the authors' calculations unless otherwise noted.

Part 2: Claims Process Discussion

We begin by reviewing the legal environment and administrative procedures used to process claims. The City has a clear process for managing claims. Two claims adjusters, employees of the City Attorney's office, evaluate claims and recommend a course of action. Assessment criteria are not codified, partly because much depends on the circumstances of a particular claim and partly because codified criteria would provide a road map for manipulation of the claims process. The claims adjusters consult with each other regularly, bringing a useful degree of rigor and consistency to the assessment process. The City Attorney's office uses a proprietary database system, ProLaw by Thomson/Reuters, to track claims and other legal matters. Aside from the administrative efficiencies gained, the system imposes a degree of rigor and consistency to the data that we did not observe in that provided by the other cities we studied.

We were asked to provide a detailed, step-by-step outline describing how routine claims are processed. The full outline can be found in Appendix A. The following is a brief summary of the process:

- When a claimant believes he/she was harmed by an action of the City or its employees, he/she files a claim with the City Clerk who then forwards it to the City Attorney's office for action. A claims adjuster creates a ProLaw record and investigates the claim, assembling evidence from the complainant and the responsible city agency. Upon completion of the investigation, the adjuster recommends one of four options to the City Attorney: settle the claim, deny it, tender it to a third party, or file it as "inactive" for being improperly filed or having insufficient proof. A Deputy City Attorney reviews all recommendations.

- The City Attorney makes the final decision on claims of $5,000 or less; otherwise, he/she recommends a course of action to the Judiciary and Legislation Committee of the Milwaukee Common Council, after which the full council makes a decision based on the committee recommendation. If the City Attorney denies a claim, the claimant can appeal it to the committee, which hears the appeal and affirms or overturns the denial. The City has a degree of sovereign immunity, so that a claimant may file suit in circuit court only after this process has been completed, and the claim denied. If a claimant files suit, the City Attorney represents the City of Milwaukee.

- Most claims are fully investigated. Some claims are filed merely as a formality by claimants intending to litigate and may not go through the full process outlined above. If it appears that litigation is likely, adjusters may confer with an Assistant City Attorney to discuss the efficiency of a full claim investigation, as opposed to a simple denial without a full investigation. Any concerns regarding a claim or claims strategy are brought by the adjusters to an Assistant City Attorney or the Deputy City Attorney for review.

Non-Routine Claims

Two classes of claims were included in the data provided, but are omitted from our analysis. They are resolved in separate processes constrained by laws and contracts. See Appendix A for a full description of these claims and settlement processes.

Claims for Police Officer Attorney Fees – An average of 80 claims per year are filed to compensate police officers for attorney's fees incurred. Claims adjusters do not receive or process claims by police for attorney fees. After being entered into ProLaw by a paralegal, these claims are referred directly to an Assistant City Attorney for review. The criteria for assessing these claims are defined by statute and the City's labor agreements.

Tax Assessment Claims – On average, businesses seeking remission or adjustment of property taxes file 60 claims each year. Claims adjusters do not research these claims and are responsible only for entering information into ProLaw. If accepted and settled, these claims are paid out of a separate remission of taxes account (Reavey, personal communication, 2009).

Claims Processing and Resolution Alternatives

In our judgment, the process for addressing routine claims is straightforward and effective. However, there are options that may increase the quality of data collected or efficiency of the process. Three such strategies are creation of a standardized claims form, online claims filing, and online claims negotiation.

Standardized Claims Forms — The claims filing process should take into account both the City's need for appropriate information and residents' need for a straightforward procedure. Milwaukee does not require claimants to fill out a specific form; instead, residents are given instructions describing the process and listing the information required (n.d.). City staff asked that we consider whether a standardized claims form could simplify this process for the public and for the claims adjusters (Pearson, personal communication, 2009). We conclude the improvement would not be substantial and that a poorly designed form could do more harm than good.

We reviewed claims forms used by Chicago, Oakland, Pittsburgh, and Seattle, and find they provide no clear advantage over the instructions the City provides. Oakland (n.d.), Pittsburgh (2005), and Seattle (2009) all use a single form, but each emphasizes different information: Oakland asks for more detail relating to injury claims; Pittsburgh includes a detailed vehicle inventory; and Seattle has a line for lost wages. Chicago uses three separate forms, each corresponding to a different type of claim: vehicle damage, property damage, or excessive water charges (n.d.). These differences suggest that if a form is going to be useful to Milwaukee, it should be carefully tailored to the City's specific data needs and claims environment.

ProLaw allows the claims adjusters to code each claim with one of 59 descriptive categories and to designate the City department responsible (in the case of the Department of Public Works, the designation extends to the division or operational unit responsible). Having the adjusters act as gatekeepers in this regard is a benefit; they bring consistency and rigor to the process that a form cannot provide. Instituting multiple forms or blanks for all contingencies would require the claimant to classify her/his claim, which a claims adjuster would then have to review. A claims form might be useful in collecting required information on the claimant, such as name, address, and contact information, and in getting the claimant to specify an amount for the claims demand. It is not clear that it would make the process as a whole more convenient or efficient for either party.

Automated Online Filing — An automated online claims filing system might improve efficiency by allowing claimants to enter information directly into a database. More resources could be put into investigation, facilitating faster claims resolution and improving public relations. Residents (at least those with easy access to the Internet) may find the convenience of online filing to be an improvement. However, we conclude there are no clear benefits at present from moving the City's claims filing process to an online system.

Such systems are common in state unemployment programs, which deal with high volumes of claims from applicants spread over wide geographic areas. Though regulations vary from state to state, the process of determining unemployment eligibility typically requires the applicant to provide regular (weekly or bi-weekly) updates. States with online unemployment filing include Alaska (2009), California (2005), Connecticut (2004), Oregon (n.d.), and Wisconsin (2009a).

Online filing would require a standardized form, and increased efficiency could outweigh the complexity of establishing such a system. However, to fully realize the advantages of an online filing system, it would have to be integrated with or ported into the ProLaw database. This may not be feasible from a software or security standpoint.

Application efficiency gains must be weighed against costs across the entire claims process. The most resource-intensive step of the current process is the actual investigation—particularly the portion of the investigation depending on cooperation from individual departments—and the time needed for data entry is relatively small (Carini and Overholt, personal correspondence, 2009). Moving to an online system would likely only replace the data-entry step with an accuracy-checking step. Finally, it is possible that making it easier to file a claim could increase the volume of frivolous and nuisance claims.

Automated Claims Negotiation — An option to facilitate settlement of claims is automated claims negotiation, involving double-blind bidding between claimant and the government entity. Milwaukee does not presently include an explicit bargaining component in its claims process. One vendor is CyberSettle, whose software resembles an online auction with up to three rounds of bidding. The software automatically accepts a settlement if at any point there is an overlap of bids.

CyberSettle claims that New York City saved $11.6 million during its first year using the software (2009). We did not have the opportunity to independently verify the claims.

Such an automated claims negotiation process may be worth investigating in light of a proposed change to state law. The 2009-2011 Wisconsin biennial budget bill includes a proposal to adjust the definition of joint and several liability. The present standard, adopted in 1995, provides that an entity is liable when found responsible for at least 51 percent of the causal negligence (Wisconsin, 1995). Under the proposal, this standard is removed (Wisconsin, 2009b). Its effect would be such that if a judgment found the City partially liable for negligence in which other liable parties cannot pay a settlement, it could be found responsible for the full amount of the judgment. As of this writing, the modified liability standard has not been adopted; if it becomes law, the City may want to consider automated negotiation as a way to avoid costly investigations and reach mutually acceptable settlements.

Part 3: Methodology and Data

The City of Milwaukee contracts for ProLaw, a legal management database in which all legal matters brought before the City, including claims, are entered and tracked. Between January 1, 2004 and December 31, 2008, residents filed 5,511 claims that were entered into the ProLaw database. Data recorded for each claim include:

1. Claimant;
2. Location, date, and type of the alleged incident;
3. The city department responsible;
4. Date and amount of the claim;
5. Its present status and disposal, including any amount paid against the claim; and
6. Other aspects of the claim—whether it was denied by the City Attorney's office, ordered paid by the Common Council Judiciary and Legislative Committee after denial by the City Attorney's Office, litigated, or whether the City Attorney's Office determined there was no proper claim.

We eliminated 16 percent of those claims for various reasons, shown in Table 3-1, leaving a data set of 4,655 routine claims. Our regression analyses of claims against the Department of Public Works omitted claims records that did not include a valid incident date or identify a responsible division of the department.

Table 3-1. Claims Deleted from Data Set

Description	*Number*	*Percentage of initial data set*
Initial data set	5,511	100%
Claims filed against non-City entities or autonomous City agencies (e.g., Milwaukee Public Schools, Housing Authority)	-109	-2%
Claims for police officer attorney fees	-432	-8%
Claims for property taxes paid due to alleged excessive assessments	-315	-6%
Data set used in trend analysis (Part 4)	4,655	84%
Claims against Department of Public Works	3,405	62%
Claims not including valid incident date or responsible division	-454	-8%
Claims used in regression analyses regarding Department of Public Works	2,951	54%

These 4,655 routine claims, totaling $2.2 million in settlements, constitute our data set. There were 219 claims not resolved in the claims process that went to litigation. We retain the original claims records in our data set, but given the scope requested we do not include litigation outcomes (and any judgments awarded) in our analysis.

To provide the best possible information from the data given and to facilitate benchmarking this information against that from other cities, we organized the data across three dimensions:

1. The City Attorney's office categorizes claims among three categories. "Large" claims are those in which the claimant demands more than $5,000. "Small" claims include demands of $5,000 or less. Any claim involving a city vehicle is classified separately in the "vehicle" category, regardless of the amount demanded (Ledvina and Pearson, personal communication, 2009). Large claims are limited to $50,000 under §893.80(3) of the state statutes (Wisconsin, 2008b), and vehicle claims are limited to $250,000 under §345.05(3) (Wisconsin, 2008d).
2. When a claim is received, the claims adjuster determines which City department is involved in the claim. For claims against the Department of Public Works, the determination specifies the division or operational unit involved.
3. The Public Entity Risk Institute (PERI) has a national data exchange survey program on municipal claims that categorizes claims by functional type. The institute broadly divides claims as involving property damage, personal injury, or expenses; they subdivide personal injury claims among damages and attorney fees, and claims for expenses among administrative and legal expenses (2007, p. 3). Our review of the data identified logical subcategories based on PERI's framework, such as damage caused by public utilities or claims involving vehicles.

These three dimensions—illustrated in greater detail in Figure 3-1—allow us to summarize claims data and examine trends by the City's categories, by department or division, and by functional type.

In the process of cleaning and categorizing the data to facilitate our analysis, we identified PERI as a potential resource the City might use. The institute collects, assembles and disseminates data from voluntarily participating jurisdictions across the nation. Its data structure allows for a common standard in claims management. We found it useful to adapt it for organizing the data set used in our trend analysis (Part 4), as well as organizing data from comparable cities in our benchmarking study (Part 5).

An important limitation of our data set is that it shows a lot of statistical variance —data are spread across a wide range of values. Statistical conclusions are less confident when there is a lot of variance, but a larger data set can help compensate. With only five years of data and a relatively moderate number of claims to consider, we took care not to slice the data into too many small categories, so as not to magnify the variance in those smaller categories.

Figure 3-1. Dimensions and Criteria for Organizing and Coding Claims Data

<u>By category</u>

- Large (More than $5,000)
- Small ($5,000 or less)
- Vehicle (any city vehicle)

<u>By department or division</u>

- Dept. of Public Works
  - Administrative Services Division
    - General Administration
    - Parking and Towing
  - Infrastructure Services Division
  - Operations Division
    - Fleet
    - Forestry
    - Sanitation
  - Water Works
- Police Department
- All other City departments
  - Assessor
  - City Development
  - Election Commission
  - Fire Department
  - Library
  - Neighborhood Services
  - Treasurer
  - Other
- Unassignable

<u>By functional type</u>

- Expenses
  - Administrative expenses
    - Claims arising from employee policies
    - Other administrative claims
  - Legal expenses
    - Claims relating to civil rights
    - Claims involving vehicles
    - Other legal claims
- Personal injury
  - Bodily injury damages
    - Falls
    - Claims involving vehicles
    - Other bodily injury claims
  - Plaintiff attorney fees
- Property damage
  - Damage caused by public utilities
  - Claims involving vehicles
  - Other property damage claims

Part 4: Trend Analysis

During fiscal years 2004 through 2008, the City of Milwaukee paid $12.4 million in damages through its damages and claims special purpose account. The majority of these payments went to satisfy civil judgments for damages.

By comparison, $2.2 million was paid against 4,655 claims filed during that period and resolved through the routine claims process. Our trend analysis is restricted to this latter group of claims. In this section we summarize our analysis of the claims and claims history. Detailed descriptions of our methodology and results can be found in Appendices B and C.

Claims by Group

Figure 4-1 shows how these claims break down among the three dimensions of claims (category, department, and functional type). Vehicle claims outnumber small claims by a ratio of five to two, and large claims by four to one. Nearly three-fourths of claims were against the Department of Public Works, followed by the Police Department with one-fifth. Property damage accounted for three-fourths of all claims, with the remainder divided fairly evenly between personal injury claims and claims for administrative and legal expenses.

We would expect that most vehicle claims are associated with the Department of Public Works because of its large fleet of vehicles and its responsibility for street repair and maintenance. The data bear out this expectation, as illustrated by Figure 4-2, which shows the monthly volume of public works vehicle claims, other public works claims, Police Department claims, and claims against all other City departments.

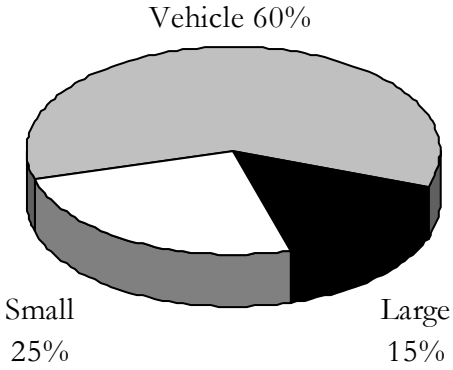
We evaluate claims trends over time graphically, considering claims volume, resolution, and payment. We find no statistically significant trends among claims filed from 2004 through 2007 and consider the high number of claims filed in 2008 an outlier.

Claims Volume

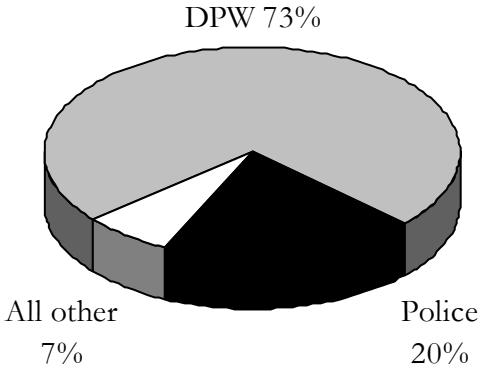
Looking at claims volume (Figure 4-2), we observe two peaks, a winter 2007-08 peak consisting of vehicle claims and a June 2008 peak of large claims for property damage, both against the Department of Public Works. As we began this study, City staff told us they believe that weather in general, and extreme weather in particular, was a significant driver of claims. This review suggests that this may be the case, at least in terms of the extreme weather between December 2007 and June 2008. We further explore the impact of weather on claims against the Department of Public Works later in this section.

Figure 4-1. Breakdown of Claims Volume by Dimension

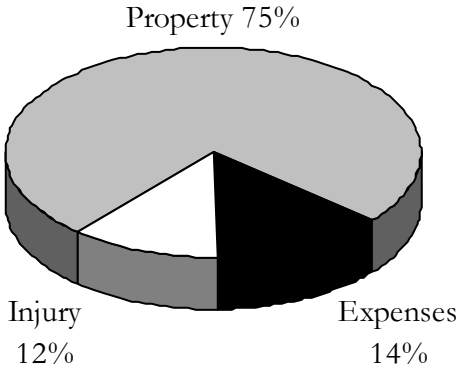
By Category



By Department

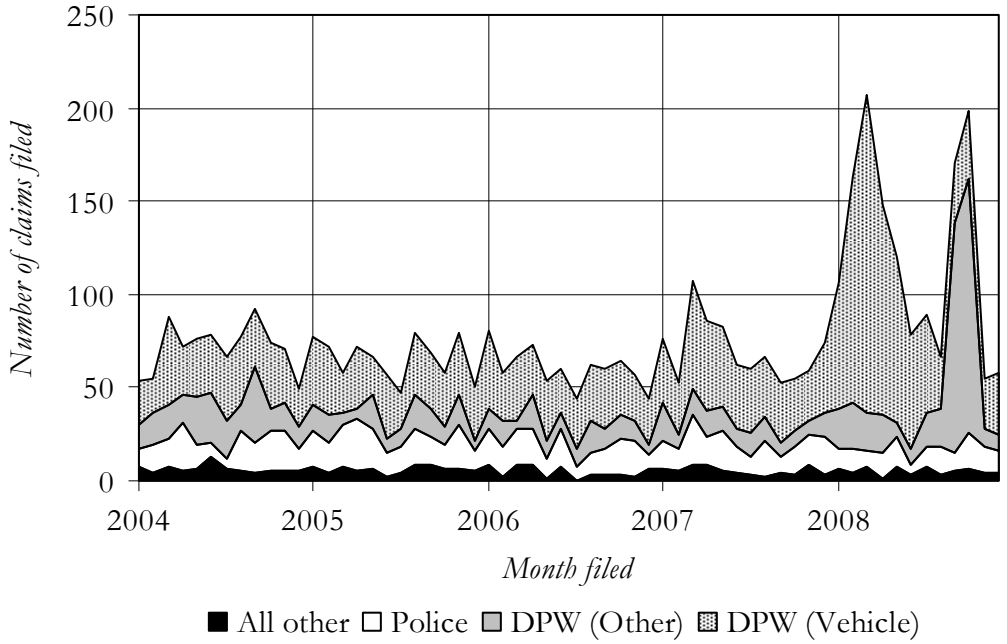


By Functional Type



Percentages may not add to 100% due to rounding.

Figure 4-2. Monthly Claims Volume



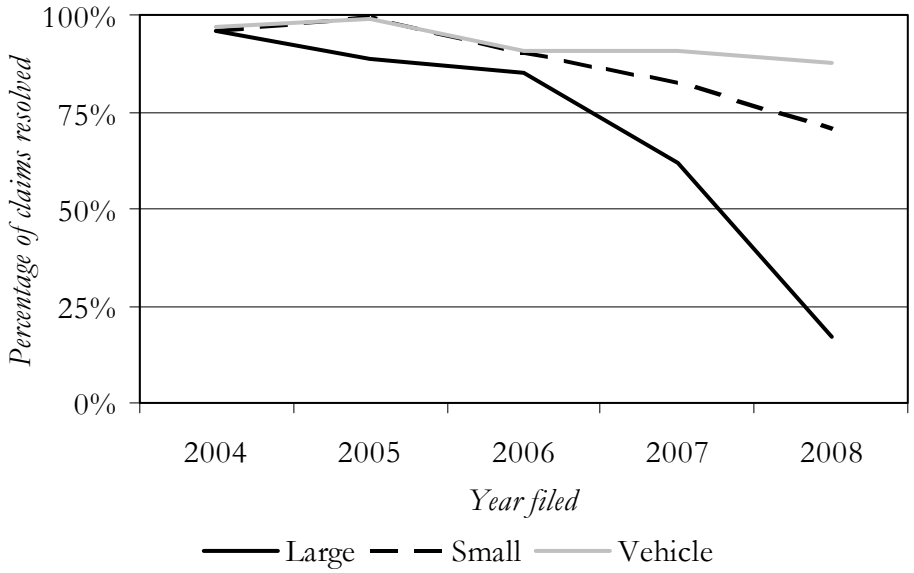
Resolution of Claims

We attempted to evaluate trends in the resolution of claims. As we discuss in Part 2, claims adjusters in the City Attorney's office evaluate, investigate, and recommend an action for each claim. In cases where further action is not recommended, a claim is assigned "inactive" status (examples include claims with incomplete information or with no damage amount specified). When a claim is denied or paid it is assigned "closed" status. Functionally, either status is equivalent in that it resolves the claim within the routine process; we consider a claim to have been resolved when it is assigned a status of inactive or closed.

If the process is consistent, we would expect that older claims are more likely to be resolved than newer claims, simply because they have had more time for investigation and processing. The aggregate data support this conclusion, but we are not able to confirm it with statistical certainty. Further, with the data set limited to five years and many claims requiring one year or more for resolution, data on claims filed earlier and resolved are not directly comparable to those filed later.

Figure 4-3 illustrates the percentage of claims resolved among those filed in each year of our time period, by claims category. A significant decrease is observed in 2007 and 2008 among large claims, with smaller decreases among small and vehicle claims, suggesting that large claims take much longer to resolve. We find that among claims filed and resolved between 2004 and 2006, large claims took an average of 330 days, small claims 143 days, and vehicle claims 104 days. However, given the limitations of the data set, we are not able to evaluate trends statistically.

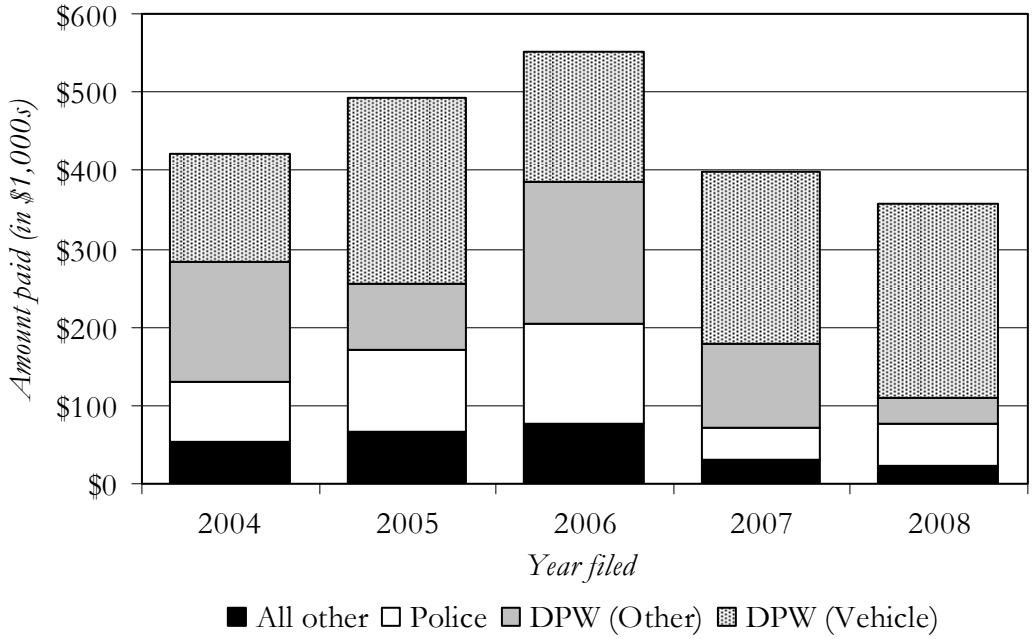
Figure 4-3. Percentage of Claims Resolved, by Category



Payment of Claims

We find that 25 percent of the claims in our data set have been paid in whole or in part, for a total of $2.2 million. Figure 4-4 shows the total paid against claims filed in each year, using the same categories as Figure 4-2. Given the variance in the data and the number of unresolved claims, particularly in later years, we are unable to evaluate payment trends over time.

Figure 4-4. Amount Paid Against Claims Filed in a Given Year



Claims Against the Department of Public Works

The majority of claims filed and paid in the study period were against the Department of Public Works. The data set is rich enough for us to examine these claims on a level not possible with claims against other departments. A total of 3,405 claims were filed against the department from 2004 through 2008, with $1,568,436 paid against those claims. Table 4-1 illustrates the top 10 claims categories against the department by volume, and Table 4-2 the top 10 by total amount paid; both are based on the 59 descriptive categories assigned by the claims adjusters in ProLaw.

Table 4-1. Top 10 DPW Claims Categories by Volume

Category	*Number*	*Percentage*
1. Vehicle Damage - Road Defect	750	22%
2. Vehicle Accident City - Property Damage	491	14%
3. Sewer Backup - Maintenance	346	10%
4. Towing - Property Damage	309	9%
5. Property Damage - Other	228	7%
6. Vehicle Damage - Other	196	6%
7. Property Damage By City Vehicle	159	5%
8. Vehicle Accident City - Bodily Injury	141	4%
9. Other	115	3%
10. Towing - Items Stolen	79	2%
All other claims	591	17%

Table 4-2. Top 10 DPW Claims by Total Amount Paid

Category	*Amount*	*Percentage*
1. Vehicle Accident City - Property Damage	$596,633	38%
2. Property Damage - Other	$321,265	20%
3. Vehicle Accident City - Bodily Injury	$151,355	10%
4. Sewer Backup - Maintenance	$98,552	6%
5. Property Damage By City Vehicle	$89,100	6%
6. Other	$71,340	5%
7. Water Main Break	$49,898	3%
8. Vehicle Damage - Other	$48,034	3%
9. Vehicle Damage - Road Defect	$31,679	2%
10. Towing - Car Destroyed w/o Notice	$29,701	2%
All other claims	$80,880	5%

Vehicle-related claims are the largest presence on both lists. In all, vehicle claims make up 69 percent by volume and 65 percent by amount paid of all claims against the department with a total of $1,011,824 paid (this includes categories not shown above). There may be employment or driving practices that would reduce the City's claims liability in this area. However, the data from ProLaw do not permit us to suggest specific practices. It would require a review of individual claims files, collecting data on the nature of the damage, circumstances of each incident, and other details, which is beyond the scope of our analysis.

We conducted statistical analyses of the 2,951 claims records that list a divisional or operational unit of the department and include a valid incident date. The incident date is crucial because it allows us to incorporate climatic data from external sources and explore the effect of seasons or extreme weather events, if any. Much of the department's work is seasonal, so it is reasonable to expect we will observe seasonal and weather-related trends in the data.

First, we attempted to predict the monthly volume of claims filed against the department based on seasonal, climatic, and other factors. Linear regression of the claims data resulted in a very sound model. We found that 92 percent of the variation from month to month can be explained considering only four factors:

1. The total monthly snowfall,
2. The extreme snowfall period between December 2007 and March 2008,
3. The extreme rainfall period of June 2008, and
4. Whether the claim was against the Infrastructure Services Division as opposed to the other three divisions.

On average, we predict a base level of 43 claims per month, of which 32 were against Infrastructure Services. Monthly snowfall totals predict additional claims; one foot adds nine claims, while two feet add 35. Claims increased by 51 claims per month from December 2007 through March 2008, during which Milwaukee received 84 inches of snow, compared to an average annual snowfall of 47 inches (National Climatic Data Center, 2008; 2009). Our model shows an additional 233 claims during June 2008, when Milwaukee received 10.96 inches of rain, 7.4 inches above the June average (National Climatic Data Center, 2009).

Next, we tried to predict whether a claim was paid based on similar factors, using logistic regression. This statistical method presents information in terms of odds, which is the ratio between the probability that an event occurs—in this case, that a claim is paid—and the probability it does not. For example, 27 percent of public works claims were paid; the odds associated with that probability are 27%/73% = 0.37 (approximately 4 to 11). We find that a number of factors affect the odds, but our best model can only explain 30 percent of the variation.

As mentioned in our discussion of claims resolution, the percentage of claims resolved decreased later in the study period, which should translate into a corresponding decrease in the odds a claim was paid. For each month that passes, we find that the odds of payment decrease by 1.4 percent. The length of time following an incident in which a claimant waits to file has an effect; each month's delay decreases the odds by 12.8 percent. While the City chooses to accept claims outside the 120-day statutory window of §893.80 (Wisconsin, 2008b) it is clearly more receptive to timely claims.

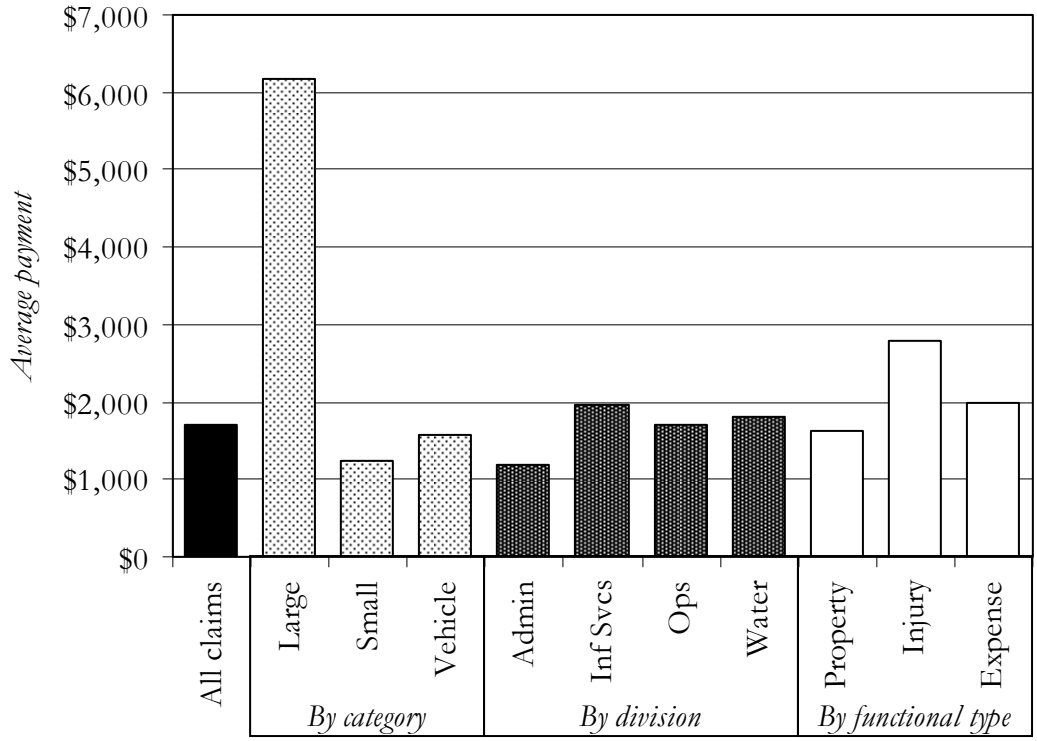
Monthly precipitation, including rainfall and water-equivalent snowfall, is predictive. The highest likelihood occurs around 3 inches—which can represent 3 inches of rain (a normal month) or 30+ inches of snow (a very snowy month)—at which the odds of payment increase by 20.1 percent.

The monetary demand of the claim was also predictive. Larger claims have greater odds of being paid, but the effect falls off as the amount demanded gets larger. For example, the odds increase by 50 percent from a demand of $236 to $3,629, but a further 50 percent increase in odds requires a demand of $55,768.

There were also differences in the odds between the different claims dimensions. We find that vehicle claims were 33 percent less likely to be paid than large or small claims. Compared to claims against the Administrative Services Division, claims against Infrastructure Services were 82 percent less likely to be paid; Operations, 154 percent more likely; and Water Works, 33 percent more likely. Compared to claims for property damage, personal injury claims were 89 percent less likely to be paid, and expenses claims 75 percent less likely. The reason for these differences is not immediately apparent.

Finally, we attempted to predict the amount paid against individual claims with linear regression. We found only two factors are statistically significant predictors, accounting for 38 percent of the variation: the length of time needed to dispose of the claim, and the amount demanded. For every month between claims filing and disposal, the average payment increased by $215. Payment increases by $2,300 if the demand increases from $236 to $3,629 or from $3,629 to $55,768. Based on versions of this model incorporating each group of claims (category, division, functional type) we provide Figure 4-5, which summarizes and compares the average claims amount paid between groups to the overall average of $1,718.

Figure 4-5. Average DPW Claims Payment, by Claims Dimension



Discussion

Overall, the only consistent predictors that residents will file claims are snowfall and extreme precipitation. The lack of a clear trend over time is in itself a positive result; a trend would suggest some defect in claims processing or management. We find that the volume, resolution, and payment of claims are steady, predictable, and related largely to factors outside the City's control.

Another trend analysis in five years, applying our process to a full decade of data, would likely yield more detailed results. With a longer baseline and larger body of data, a detailed review of claims against the Police Department should be productive, and those against other departments may be possible. Detailed case data may permit identification of causal factors among the largest group of claims, vehicle claims against the Department of Public Works.

However, we are skeptical that management practices can reduce the number of vehicle claims. Our benchmarking review in Part 5 finds that Milwaukee's costs in this area are not out of line. Assuming that City vehicles are maintained and drivers are appropriately licensed and trained, vehicle accidents are largely a behavioral issue rather than a matter of policy. Driver safety interventions can include education, rewards, or penalties. The League of Wisconsin Municipalities analyzed data on the results of such interventions with a number of peer associations, but found no resulting reduction in vehicle claims (Tweedale, personal communication, 2009).

Part 5: Benchmarking of Claims

We assess the City's exposure to claims using data from Milwaukee and five comparable cities: Baltimore, Md., Pittsburgh, Pa., and Cleveland, Ohio, three cities of similar size and climate suggested by City staff (Pearson, personal communication, 2009); and Green Bay and Madison, Wis., two cities subject to the same liability law as Milwaukee.

From the data obtained, we conclude that Milwaukee's rate of claims filed is comparable to cities surveyed for total, public works, and police claims. The rate of total claims paid is comparable to the two jurisdictions within Wisconsin, and comparable to Baltimore's claims cost rate, but exceeds the rate of the other two cities we surveyed outside Wisconsin. It should be noted that Cleveland's claims figures in this analysis exclude figures from 2006, and Baltimore, the city closest to Milwaukee in size, paid almost three times the actual claims cost of Milwaukee, during the five-year time period. The distribution of Milwaukee claims filed across departments (73.1 percent of claims originating in public works) appears to be typical. However, the rate paid for police claims was one of the lowest in the sample.

For further discussion of our benchmarking process, considerations, and results see Appendix D.

Data Acquisition and Comparability

We assessed a variety of factors to determine the list of cities to survey. City staff believed that weather was an important variable so we targeted northern-tier cities (Ledvina and Pearson, personal communication, 2009). We also collected data on population, size of city budget and staff, and economic factors. We attempted to make some general judgment about the legal climate faced by cities, whether the city self-insured for all claims or only some, and the ease or difficulty of filing and proving claims against municipalities. We were not able to find any Wisconsin cities other than Milwaukee that entirely self-insure.

We also considered and pursued an analysis strategy largely within ProLaw, with data from other cities that might use that legal matters database system. This strategy proved not to be feasible within the time frame offered us. We were well prepared to offer suitable levels of confidentiality and data security. We were stymied by the complexity of identifying potential comparable city clients within the ProLaw client base and contacting city officials for data permissions.

Representatives from 12 cities were contacted and asked for the following information (by year for all of 2004 through 2008):

- The number of claims filed
- The total dollar amount of claims paid
- The breakdown of claims filed by department

In order that data be most directly comparable to Milwaukee's routine claims, cities were also asked to exclude litigated claims from their data. Green Bay, Madison, Pittsburgh, and Baltimore were able to provide all the information we requested. Partial claims information was provided to us from Cleveland and Cincinnati. Cleveland provided aggregate claims filed and paid. Due to a data conversion error in 2006, claims from that year are excluded from the analysis (Jones, personal communication, 2009). Cincinnati's data were not used for the purposes of this report, since staff could not remove litigated claims from their data (Lenzly, personal communication, 2009).

Eight of the 12 cities contacted could not provide information or provided only partial information for several reasons. First, primary reason was that our deadlines did not leave sufficient time to provide the requested data. This was the case with Cincinnati, Detroit, and Buffalo. Second, it appears that many of the cities we contacted have comparatively unsophisticated data storage and query systems, making it even more difficult to provide a timely response. In other cases, claims were coded differently year to year, which complicated any type of analysis. This was the primary reason Cleveland provided only aggregate data. Representatives from Indianapolis readily admitted that historical claims data were incomplete (Mayes, personal communication, 2009). Minneapolis, Toledo, and Erie did not respond to our request for claims information.

We obtained comparable data from five cities similar to Milwaukee in important dimensions. We found that most cities are not as organized and rigorous in their claims process as Milwaukee. The City may gain some advantage purely from the rigor and consistency imposed by using a database system designed specifically for legal offices. Several cities manage their data with some form of self-developed Microsoft Access system. These may be inexpensive and easy to support with existing city information technology staff, but their flexibility means that the data structure is not fixed. Information can be and often is categorized and recorded differently from year to year, limiting its usefulness for comparative analysis. It also leads to an unfortunate blossoming of hundreds of categories and variables, making comparison to other cities difficult. With extensive data cleaning and categorization procedures that we believe to be reasonable, we were able to bring much of the comparison cities' data into forms that allow us to at least broadly compare their legal and property claims costs to those filed against Milwaukee.

As we pursued this work, great variation in tort and property claims over time for all the cities in our analysis became apparent. Five years worth of data were barely adequate to assess the issues of concern to us. Some of the volatility from year to year can be explained by weather events, such as 2007 and 2008 public works claims in Madison and Milwaukee. The increase in Baltimore police claims in 2008 may partially be attributed to a large group of claims, accumulated over a period of time, sent en masse to the Baltimore Legal Department by the Police Department (King, personal communication, 2009).

One of the primary limitations in our analysis was the lack of claims summary details provided in the data. This made it difficult to discern possible reasons for unusual numbers of claims filed and paid, or to identify any underlying events that influence claims volume and impact claims management. These factors limit our ability to know whether the legal claims expenses experienced by the City of Milwaukee are normal or not, much less to identify typical cost drivers or potential efficiencies.

Results

To evaluate cities on a comparable level to Milwaukee, we distributed information into comparable categories, aggregated for each year using the structure applied to Milwaukee data (see Figure 3-1). The pooled categories include total claims, police claims, public works claims, and "other" claims (claims that are not public works or police claims). Cleveland's claims figures could not be reliably disaggregated and were only used in the total claims category.

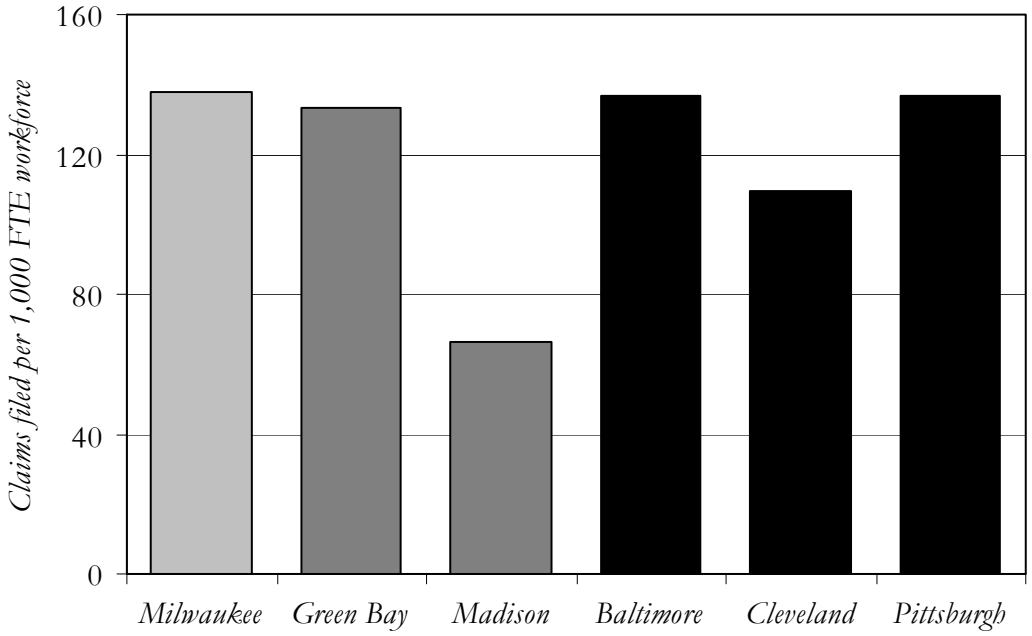
These totals were then normalized over differences in city population, city expenditures, and full-time-equivalent city workforce. Total amounts were averaged over the five-year span. Cleveland data were considered only over the entire four-year span actually delivered, to retain the most accurate comparative power.

Claims processes vary greatly by jurisdiction and it is necessary to recognize how these differences influence the nature of data obtained from potential benchmark cities. Comparisons of data sets that differ substantially from one another in terms of quality or organization can be misleading and should be interpreted cautiously. Furthermore, a larger sample of cities and a longer time period of information would greatly increase the accuracy of any conclusions within the benchmarking analysis.

Total Claims Filed

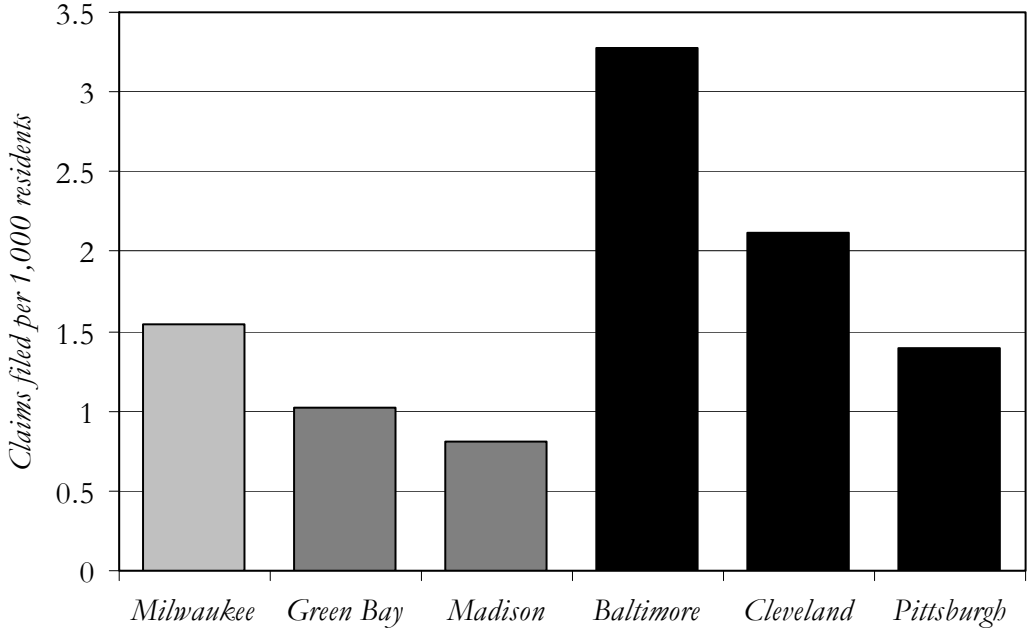
We find that controlling for the size of city workforce, Milwaukee's claims volume is comparable to Pittsburgh, Baltimore, Cleveland, and Green Bay (Figure 5-1).

Figure 5-1. Comparison of Claims Volume Relative to Workforce



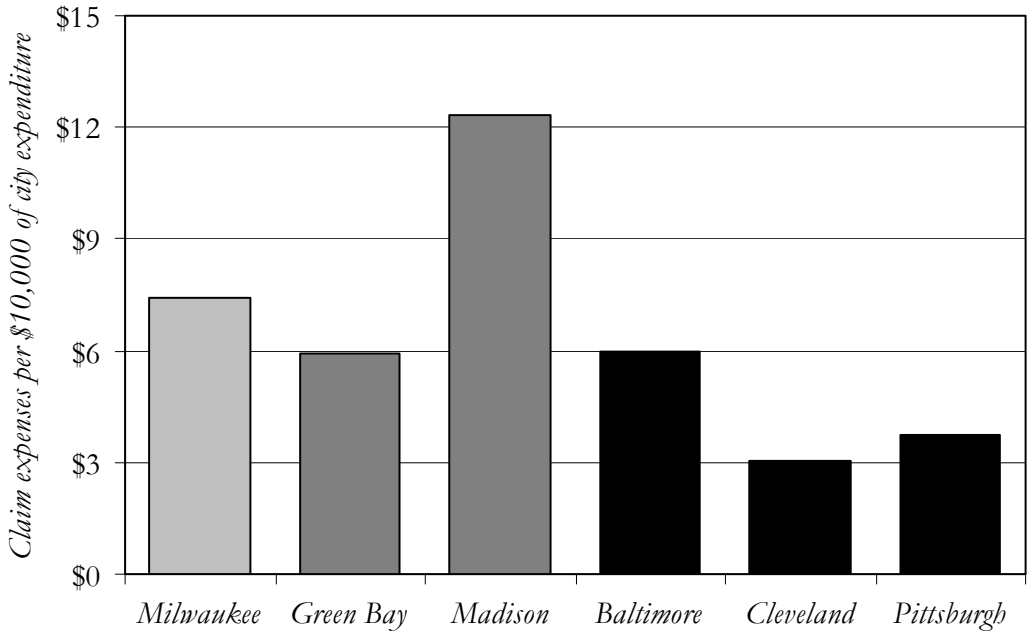
Controlling for population, we find that Milwaukee had the third-highest volume, substantially less than Baltimore and Cleveland but comparable to Pittsburgh (Figure 5-2). Closer inspection of the year-by-year numbers shows that Milwaukee was nearly equal with Pittsburgh between 2004-2007 (Appendix D, Table D-5). Milwaukee's claims volume increased sharply in 2008, accounting for some of the discrepancy.

Figure 5-2. Comparison of Claims Volume Relative to Population



We find that Milwaukee paid the second-highest amount against claims, controlling for city expenditures, substantially less than Madison but not much more than Green Bay and Baltimore (Figure 5-3). Ohio tort law may explain Cleveland's low cost of claims; cities are liable only for those deductibles incurred by claimants not paid by their insurance coverage (Jones, personal communication, 2009).

Figure 5-3. Comparison of Claims Payments Relative to Expenditures



Police Claims

We find that Milwaukee police claims volume remained relatively constant over the five-year period (Appendix D, Table D-6). On average, Milwaukee has the second highest number of police-related claims. However, the amount paid per $10,000 of operating expense is the second lowest among the five cities. During the five-year span, Milwaukee's rate was one-fourth that of Madison and approximately half the rate paid by Baltimore. City of Madison staff could not provide any immediate explanation for the high volume of police claims in Madison in 2004 (Veum, personal communication, 2009). The relatively low volume and very low cost (compared to city expenditures) of police claims reported by Pittsburgh is an anomaly, since its rate for most other claims is typical. Milwaukee's police claims costs, based on volume, appear to be average to below average, in comparison to the other cities surveyed.

Public Works Claims

On average, Milwaukee's rate of public works claims filed during the five-year period was similar to Green Bay, Pittsburgh, and Baltimore as shown in Table D-7 in Appendix D. Prior to the severe weather in 2007 and 2008, the rate of public works claims filed was typically less than Green Bay, Pittsburgh, and Baltimore on a per-thousand measure of full-time equivalent workforce. However, the rate of paid public works claims (per $10,000 in city expenses) is consistently the second highest among our five sample cities during the five-year period. Vehicle claims are more than two-thirds of the claims filed, and the cost of vehicle claims is fully half of all routine claims filed during the five-year period in question. There are spikes in claims filed during extreme weather events. However, there is primarily a constant flow of public works vehicle claims, averaging about 60 claims per month, throughout the entire analysis period.

The public works claims rate does not seem unusually large compared to other cities. However, the mere volume and concentration of claims to that department suggests that if an effort were planned to reduce claims, vehicle accidents would be one area that may warrant further consideration.

Part 6: Conclusion

Our review of the claims process finds no obvious areas for improvement. The existing process effectively meets the City's needs. Introducing a standardized claims form or moving to online filing might be useful in collecting basic information. We find, however, that the open-ended nature of the instructions provided by the City Clerk, with a claims adjuster reviewing all data, allows for more accurate categorization and better consistency in the claims process. Internet-based claims management technology may be of some benefit, especially if the legal environment regarding joint liability were to change.

We find no evidence of distinct trends over time. Our analysis shows that claims volume and costs have remained more or less stable over the past five years, with weather—particularly large snowfalls—having the only consistent impact. Had we found a clear trend, it would have suggested some systematic problem with claims processing or management. Nearly three-fourths of all claims are against the Department of Public Works, and most of those involve vehicles in one way or another. A far more detailed study is required to identify specific causal factors among this particular group of claims.

We collected claims data from five comparable cities, all of which experience similar seasonal variation as Milwaukee: Madison, Green Bay, Baltimore, Cleveland, and Pittsburgh. Our analysis of these data finds nothing to suggest that Milwaukee's claims history is abnormal or excessive.

The lack of positive results in this report should not be taken as a negative. Rather, we conclude that the City of Milwaukee does a good job dealing with routine claims that are largely outside of its control. It should be noted that these claims constitute roughly half a million dollars out of a $700 million annual budget, 7/100 of 1 percent of all expenditures. The majority of costs charged to the Damages and Claims Account are civil judgments against the City, most of which could not have been resolved within the routine claims process.

Still, we have learned a great deal about the claims process over the course of developing this report. The experience leads us to three recommendations that may help the City further improve claims management in the future.

Recommendations

1. Conduct a more detailed trend analysis in three to five years.

The advantage of a study involving a longer timeframe is that trends possibly masked by the lack of data may become apparent. The extreme weather of 2008 and the large number of resultant claims, many of which have not yet been resolved, particularly confound our study. A follow-up in three to five years should be able to evaluate the impact of these claims. Greater lead time would permit the collection of more data from comparable cities, including data from other ProLaw clients.

With regard to vehicle claims against the Department of Public Works, a follow-up study should include the review of individual claims records. Identifying causal factors requires access to more detail than is contained within the ProLaw database. For example, a rear-end collision in good weather is not the same as one in heavy snow; each implies different causes and different potential interventions.

2. Evaluate claims management technology.

The proposed change to Wisconsin's standard for joint and several liability, if passed, is likely to introduce significant costs as the City is forced to accept some portion of liability in a larger number of claims. Tools such as online filing or automated claims negotiation may help mitigate its effect by freeing up staff resources from negotiating settlements with claimants. Further study would be necessary to evaluate the legal and fiscal feasibility of such tools.

3. Review self-insurance options.

Civil judgments have a far greater impact on City expenditures than routine claims. While it may not be possible to directly reduce the amount of these judgments, the method by which the City funds their payment provides an alternative venue for addressing their impact. Currently, the City effectively self-insures through an ad hoc process involving the Damages and Claims Account and the city's bonding authority (Conrad, personal communication, 2009).

Options for systematizing the City's self-insurance include establishing a threshold above which claims will be bonded, segregating the Damages and Claims account, and using an insurance provider for vehicle claims. A cost-benefit analysis would establish the relative strengths and weaknesses of each alternative. For example, a segregated fund could allow for building a reserve without the attendant political pressure, while bonding can amortize the cost of judgments without the expenses of insurance float or the profit margin paid to an outside insurer.

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Appendix A: Claims Process Detail

The City of Milwaukee's claims process is the origin of all the data used in this analysis. Its system and structure, such as incident categories and criteria for deciding whether to grant payment, have a substantial bearing on all the data considered in this report. It is therefore important to be familiar with the claims process, both to understand the reasoning behind our trend-analysis methods and to conceptualize the terms and analysis methods used throughout this report.

Process Outline

A. Filing by Claimant
    1. The claim must be submitted to the City Clerk within 120 days after the incident
    2. Claims must include the following:
        a. Detailed description of incident, including incident time, date and location
        b. Statement of claims circumstances, signed by claimant or claimant's attorney/agent
        c. Document that (1) gives address of claimant or attorney/agent, and (2) states nature of relief sought, including the specific sum if a monetary claim. (Document may be merged with the signed statement of claims circumstances described above.)
        d. Proof of any monetary claim by means of itemized receipts or two itemized estimates
        e. Daytime phone number where claimant can be reached during business hours
        f. E-mail address, if any
B. Initial Claims Processing
    1. City Clerk forwards claim to City Attorney's office for action
    2. Claims are assigned to a claims adjuster on an alternating daily basis
    3. Claims adjusters designate claims as "small" ($5,000 or less), "large" (greater than $5,000), or "vehicle" claims
    4. Claims adjusters enter the following claims information into ProLaw database:
        a. Claimant name
        b. Incident location
        c. Incident date
        d. Money amount demanded
        e. Claims subject (chosen out of 59 descriptive categories)
        f. Department involved (and division or operational unit for Department of Public Works claims)
    5. Claims secretary retrieves information from the involved department:
        a. Separate claims according to department
        b. Compose and send investigation request letters with claims information to involved department heads

6. Upon receipt of complaint, the City Attorney's Office investigates by taking the following actions:
    a. Order photos from police and/or the Bureau of Fleet Services
    b. Order accident reports, stolen vehicle reports, and/or PT-27 Report (initial vehicle condition report for towed vehicles). Though departments are generally cooperative, response time and quality can vary
7. Claims adjuster receives involved department response
8. Claims adjuster recommends 1 of 4 options
    a. Pay (if City is responsible)
        i. Claims adjuster will appropriately disallow (i.e. adjust) claims amount sought in order to recommend a settlement sum
    b. Deny (if City or its contractors are not deemed responsible)
    c. Tender to a third party (if contractor is responsible)
    d. Take no action (if claim is improperly filed or there is inadequate documentation)
9. Basis for adjuster recommendation
    a. Relevant statutes (varies with claim)
    b. Common law concepts
    c. Basic details of each claim
    d. Consultation with City Attorney and Assistant City Attorneys (more complicated cases)
    e. Appraisal websites (for vehicles)
    f. Outside appraisers (for vehicles and property)
    g. Personal experience
    h. Consultation with fellow adjuster—adjusters generally use same tools and information sources for their decision-making, with any disagreement being generally about claims value (e. g. injury cost) and not about issues of fault
    i. Claims are only paid if the City is 51 percent or more at fault
10. All recommendations must be reviewed and approved by a Deputy City Attorney or the City Attorney

C. Finalizing and Processing Claims Decisions
1. Tendered claims packages (third party at fault, not City) go straight to third party and do not go to Judiciary and Legislation Committee.
2. Packages of $5,000 or less are reviewed by City Attorney, who makes final decision whether to pay, deny, tender, or take no action
3. Staff send packages of $5,000 or more for review to Judiciary and Legislation Committee along with letters signed by City Attorney and an Assistant City Attorney (letters include City Attorney's recommendation)
    a. Full Common Council denies or approves claim based on committee recommendation.
4. Appropriate documentation regarding claims outcome is sent to interested parties

5. Denied claims can be appealed through the following process:
    a. Copy of appealed claims file is made and sent to the Judiciary and Legislation Committee clerk, who places it on the agenda
    b. Judiciary and Legislation Committee hears claim and affirms or denies City Attorney's decision
    c. Claimants may file suit in Milwaukee County Circuit Court if denial is affirmed
    d. If claimant files suit, City Attorney represents City of Milwaukee (if there is a conflict, City hires outside counsel)
6. If claim is to be paid, claims adjuster completes a settlement request and claims secretary takes the following actions:
    a. Information necessary for generating a check is entered into FMIS-Financials software
    b. Voucher is printed and sent to City Comptroller's office
    c. City Comptroller's office approves payment voucher and sends it to the City Treasurer's office
    d. City Treasurer's office prints check
    e. Letter regarding claims outcome is sent to claimant (letter includes "Release of All Claims" form)
    f. Claimant returns signed, notarized "Release of All Claims" form to City Attorney's office
    g. City Attorney's office sends check to claimant
7. Claims adjuster enters claims outcome and settlement amount, if any, into ProLaw database.
8. After all paperwork is processed, claim is closed and physical file is placed in appropriate claims drawer.

D. Exceptions
1. Most claims are fully investigated. Some claims are filed merely as a formal step toward getting a case heard in court and may not go through the full process outlined above. If it appears that a court case is likely, adjustors may confer with an Assistant City Attorney to discuss the efficiency of a full claims investigation versus denial without a full investigation.
2. Any concerns regarding a claim or claims strategy are brought by the adjusters to an Assistant or Deputy City Attorney or for review.
3. Claims for police attorney fees payment or property tax remission are entered into ProLaw, and then resolved through completely different processes (see below).

Sources: Carini, Ledvina, Overholt, and Pearson, personal communications, 2009; Conradson Cleary, 2008.

Claims for Police Attorney Fees

Approximately 80 claims per year are filed to pay attorneys representing police officers. Police attorney fee claims are non-routine and are not handled or processed by claims adjusters. After information on the filed claim is entered into ProLaw by paralegal staff, these claims are referred directly to an Assistant City Attorney for processing (Carini and Overholt, personal communication, 2009). Because police attorney fee claims fall outside of the routine claims process, we dropped them from the data set used for our analysis.

Payment of legal fees incurred by police officers in reference to their duties are governed by the collective bargaining agreement between the City and Milwaukee Police Association and Wisconsin Statutes §895.35 and §895.46 (Milwaukee, 2007a; Wisconsin 2008a). There are two types of police attorney fee claims: complaints originating with citizens (citizen complaints) and those arising from criminal complaints. The latter complaints are matters of internal discipline, and related attorney fees are paid by the police officers' union. Citizen complaints are unforeseeable claims brought by the public against an officer, and payment is subject to state law and binding agreements between the City and police unions (Smokowicz, personal communication, 2009).

In regard to civil charges, the City of Milwaukee has discretion over whether to pay attorney fees arising from citizen complaints as long as the case is not decided against the officer. The Common Council normally chooses to grant payment in order to maintain a positive relationship with the Milwaukee Police Department and the police unions. Though officers have the right to choose their own lawyers, the Milwaukee Police Association and Police Supervisors Organization each have a single law firm on retainer. As a result of these firms' regular interaction with the claims process, the fee amounts claimed generally fall within a range the Common Council deems reasonable (Smokowicz, personal communication, 2009).

In regard to criminal charges, the City of Milwaukee is legally required to pay attorney fees arising from citizen complaints as long as the case does not result in the officer's criminal conviction, firing, demotion, forced resignation, or unpaid suspension for more than 10 workdays (Smokowicz, personal communication, 2009).

An attorney wishing to make a claim for fees sends the request to the City Clerk, who periodically compiles the claims into batches and sends them to the City Attorney's office. The claim is not handled by claims adjusters but is entered into ProLaw by a paralegal, who afterward prepares a letter to be signed by the Assistant City Attorney and the City Attorney.

The paralegal sends the signed letter to the Police Department to verify that the attorney rendered the services described in the claim. Once verification is obtained, the paralegal processes the claim by following a standardized checklist and uses ProLaw to generate an appropriate letter. The Assistant City Attorney reviews the claim and gives it to the City Attorney for her/his authorizing signature. Once

signed, the letter is sent to a legal office assistant so the claim can be prepared for a Common Council resolution.

The legal office assistant emails the resolution to all interested parties. After the resolution is adoption by the Common Council, the claims clerk processes a payment voucher to send to the City Comptroller's office so a check can be printed. The claimant attorney is then sent a "Release of All Claims" form, which must be signed and returned before the check can be distributed. After the claims clerk sends out the check, the paralegal copies the claims release into the physical file and closes the claim in ProLaw.

All the claims in a batch must be resolved before any can show up in ProLaw records as closed. This means a small number of unresolved claims can skew records to show a large number of unpaid claims. There was also a period of time where no one was assigned to close police attorney fee claims files. The City Attorney's office is currently in the process of updating the claims that have been resolved but not closed (Smokowicz, personal communication, 2009).

Tax Assessment Claims

Tax assessment claims are non-routine claims filed by taxpayers, usually businesses, who are seeking tax remission. Every year, just before the January 31 filing deadline pursuant to Wisconsin Statutes §74.37 and §70.47 (Wisconsin, 2008c), some 60 tax assessment claims are filed. However, successful tax assessment claims are not paid out of the Damages and Claims special purpose account as routine claims are, but are instead paid out of a budgeted remission of taxes fund or through contingency borrowing. Claims adjusters do not research tax assessment claims and are only responsible for entering the initial claims information into ProLaw (Reavey, personal communication, 2009). For these reasons, we dropped tax assessment claims from the data set used for our analysis.

Tax assessment claims are only a step in the tax remission process. Again, the City's sovereign immunity provides that it may be sued only after a claim has been filed and denied. Challenges to property tax assessments and property valuation must first be brought to the Board of Assessors. Roughly 90 percent of the 3,000 appeals filed per year are resolved at the Board of Assessors review (Reavey, personal communication, 2009). If the taxpayer is dissatisfied with the outcome, he/she may then appeal the property assessment to the City's Board of Review. If dissatisfied with the Board of Review decision, the taxpayer has the option of suing for a certiorari judicial review or filing a claim for tax remission with the City. If the taxpayer chooses to file a claim with the City and the Common Council denies it, then and only then can the taxpayer sue for a de novo judicial review (Moschella, personal communication, 2009).

The difference between the two levels of judicial review is significant. A certiorari review (governed by Wisconsin Statute §70.47) is limited solely to review of the record created at a Board of Review hearing and proceedings. Most plaintiffs far

prefer to sue for de novo review (under Wisconsin Statute §74.37) where there are no restrictions regarding the issues or evidence allowed for consideration (Moschella, personal communication, 2009). A §74.37 review not only allows broader legal challenges; the greater complexity and cost can generate greater pressure for the City to settle the case before trial.

The City of Milwaukee was not subject to claims under §74.37 before 2002. Since 2002 there has been a pattern of businesses filing a pro forma claim (with little or no evidence) to the Board of Review, and then filing a similarly empty claim with the City, purely as a means to get a rapid City denial of the claim and the right to a de novo judicial hearing. Legislation was enacted in 2008 to encourage appellants to at least attempt to resolve their cases at the administrative level. The legislation required that evidence be submitted in Board of Review hearings and gave the municipalities the option to effectively block access to de novo judicial review, by allowing for ordinances prohibiting §74.37 tax assessment claims. Faced with no recourse outside of certiorari review, appellants would be motivated to make a serious effort at proving their case to the Board of Review (Moschella, personal communication, 2009).

However, the portion of the 2008 legislation dealing with §74.37 was ruled unconstitutional in January 2009. Wisconsin is in the process of appealing the decision (Reavey, personal communication, 2009). For the present, the entire process is in flux.

Appendix B: Trends Over Time

Our initial analysis is a graphical review of trends in aggregate claims data over time. This data mining exercise is restricted to claims investigated and paid within the normal claims process; we omit claims concerning property assessments and attorney fees incurred by police officers, which are handled separately.

We see a large amount of variance in the data. This may be a product of insufficient data; a longer time frame might yield a stronger predictive analysis. However, this may also indicate that the phenomenon in question is very complex. One would expect to see data with high variance and statistical models with low validity when analyzing a phenomenon with many causes, each exerting a small influence.

We examine three aspects of claims and claims performance:

- Volume of claims filed each month;
- Resolution of those claims—that is, completion of an investigation and its assignment to "closed" or "inactive" status; and
- Payments against those claims.

Each aspect is explored in three dimensions:

- Category – large (greater than $5,000), small ($5,000 or less), and vehicle (irrespective of amount);
- Department-level unit – the Department of Public Works, Police Department, and all other city departments; and
- Functional type – administrative expenses, personal injury, and property damage.

Claims Volume

We begin by reviewing the volume of claims filed. Table B-1 shows the number of claims filed against the City. From 2004 to 2007 annual volumes were fairly consistent, but 2008 saw a large jump in claims. Most of the additional 2008 claims were in the large and vehicle categories, against the Department of Public Works, and for property damage.

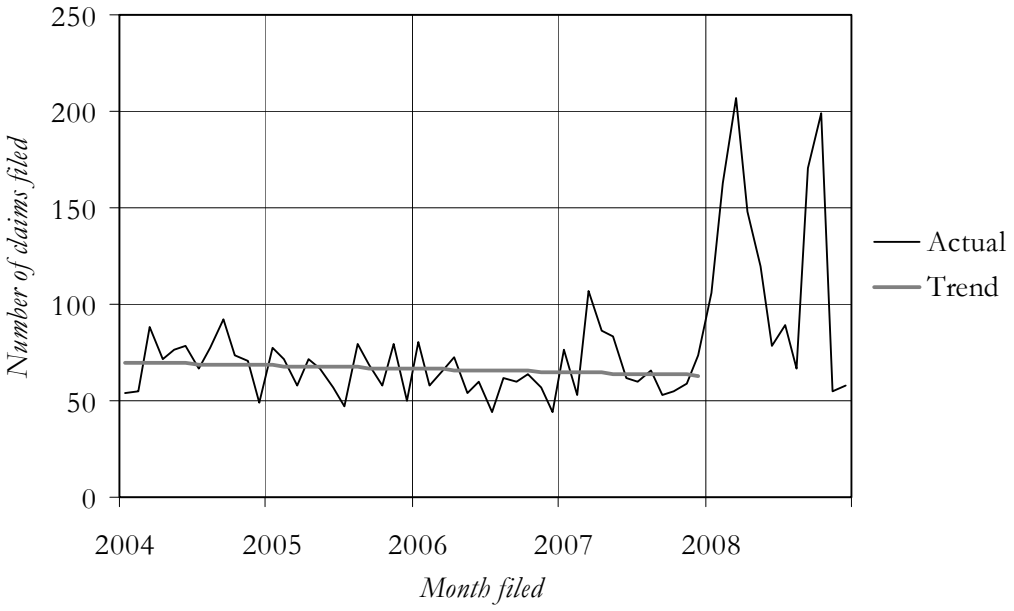
Table B-1. Volume of Claims Filed, By Year

	2004	*2005*	*2006*	*2007*	*2008*	*Total*
By city category						
Large	116	104	60	94	321	695
Small	289	214	208	220	233	1,164
Vehicle	448	467	454	520	907	2,796
By department						
DPW	595	497	483	578	1,252	3,405
Police	185	217	185	194	151	932
All other	73	71	54	62	58	318
By functional type						
Expenses	166	119	101	152	97	635
Injury	111	129	96	97	108	541
Property	576	537	525	585	1,256	3,479
All claims	**853**	**785**	**722**	**834**	**1,461**	**4,655**

The graphs in this section display monthly data and trend lines. None of the trend lines indicates a powerful or statistically significant model of claims volume.

All claims

Figure B-1. Monthly Claims Volume, All Claims



By category

Figure B-2. Monthly Claims Volume, Large Claims

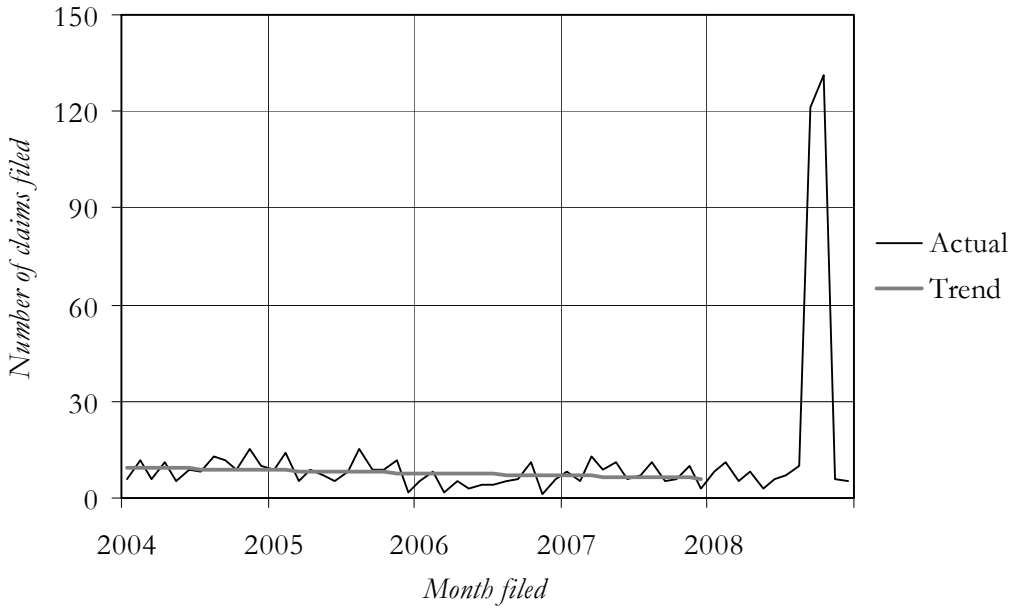


Figure B-3. Monthly Claims Volume, Small Claims

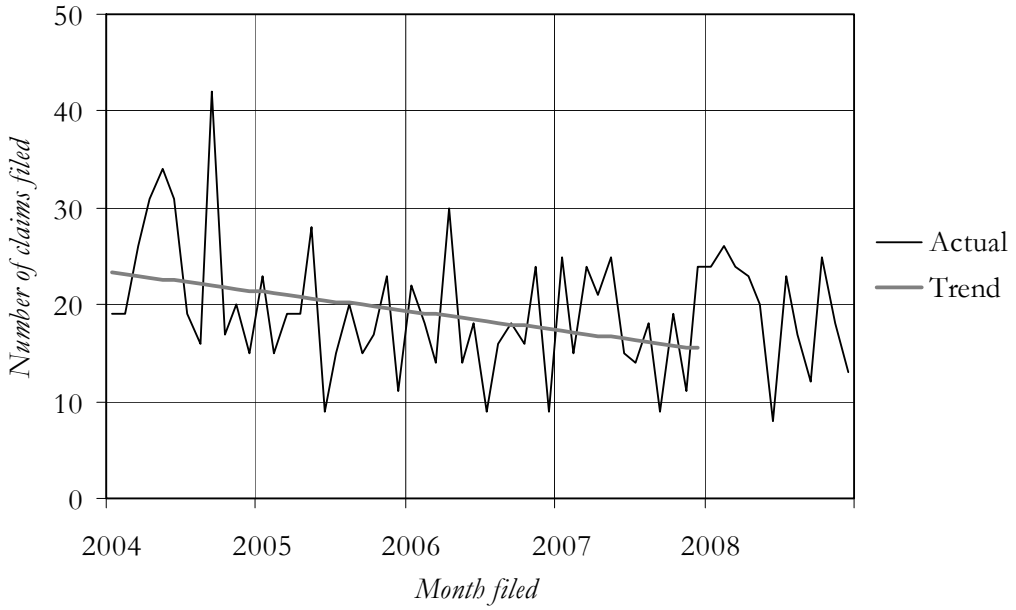
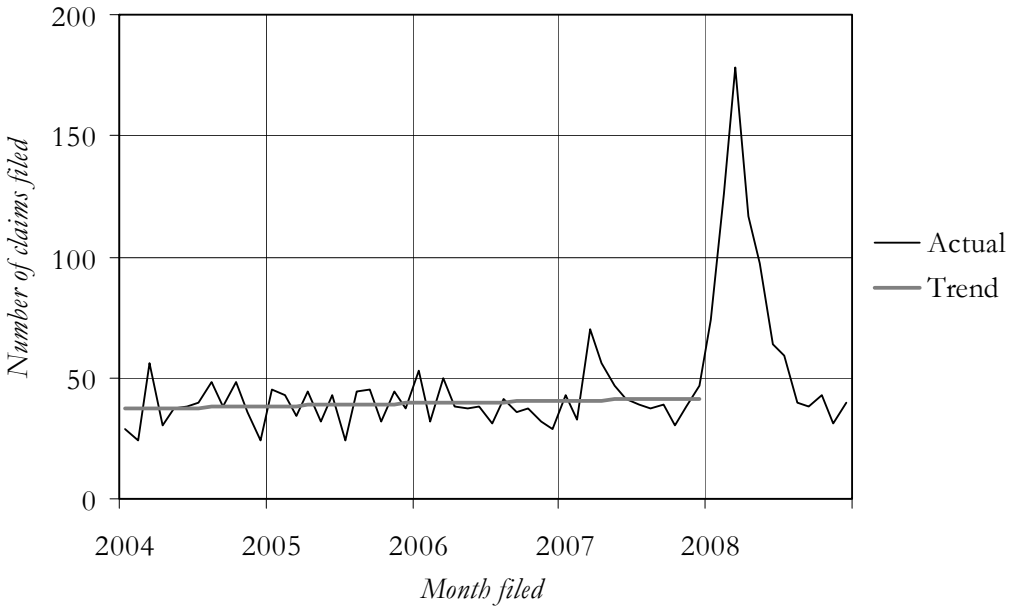


Figure B-4. Monthly Claims Volume, Vehicle Claims



By department

Figure B-5. Monthly Claims Volume, Claims Against DPW

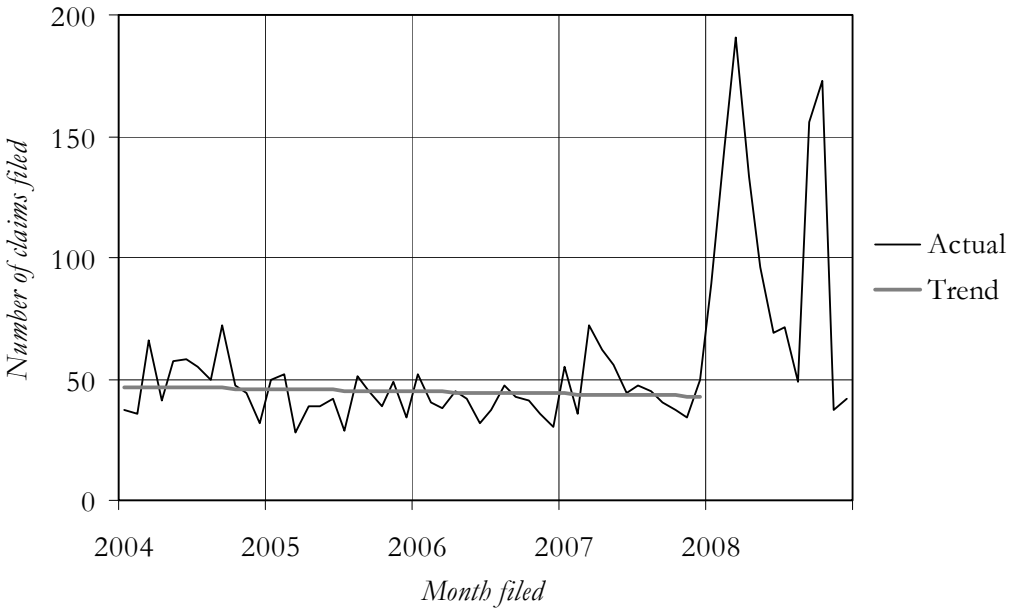


Figure B-6. Monthly Claims Volume, Claims Against Police Department

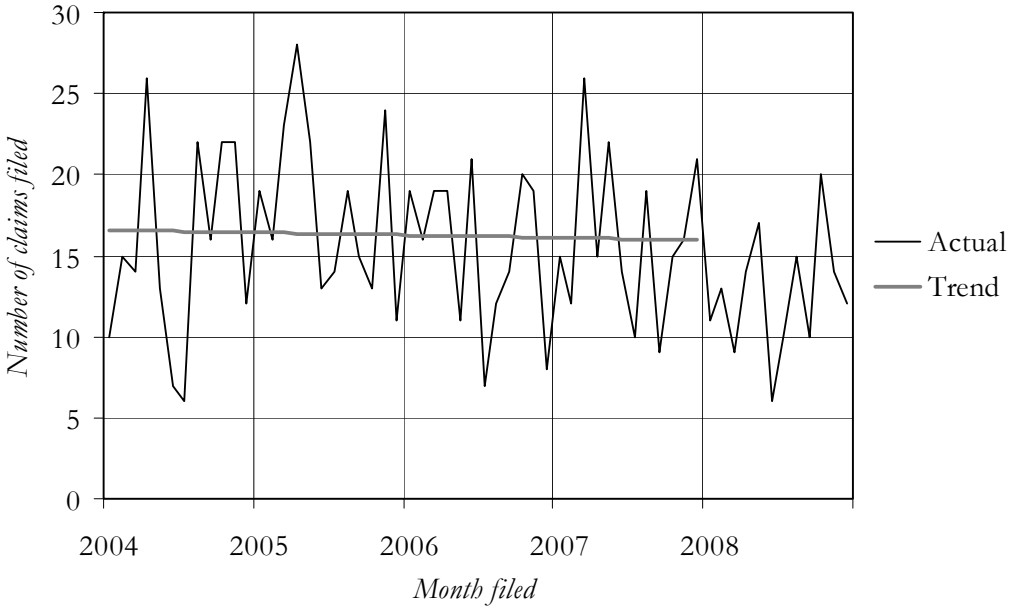
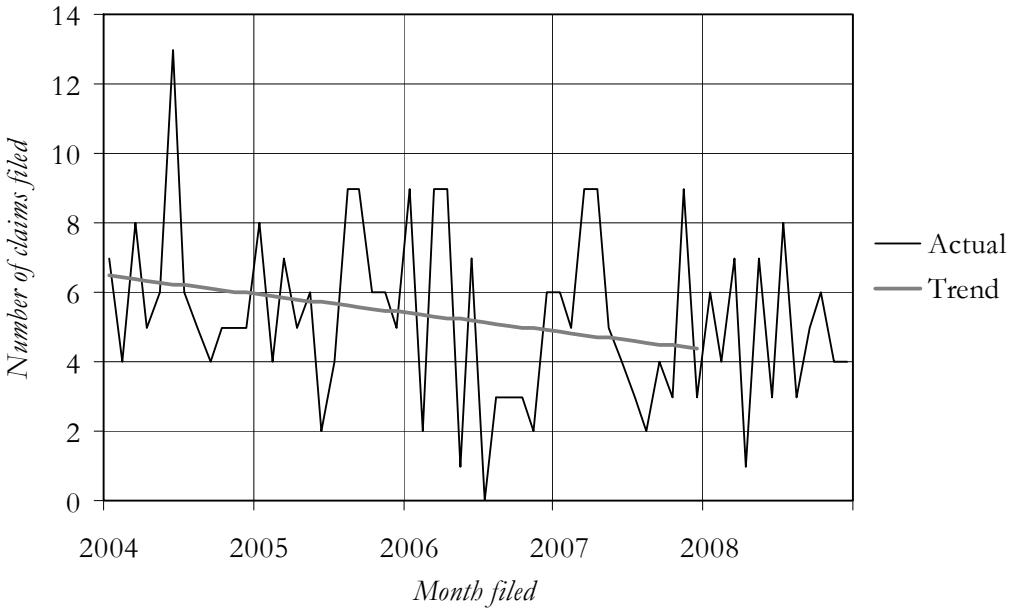


Figure B-7. Monthly Claims Volume, Claims Against All Other Departments



By functional type

Figure B-8. Monthly Claims Volume, Expenses Claims

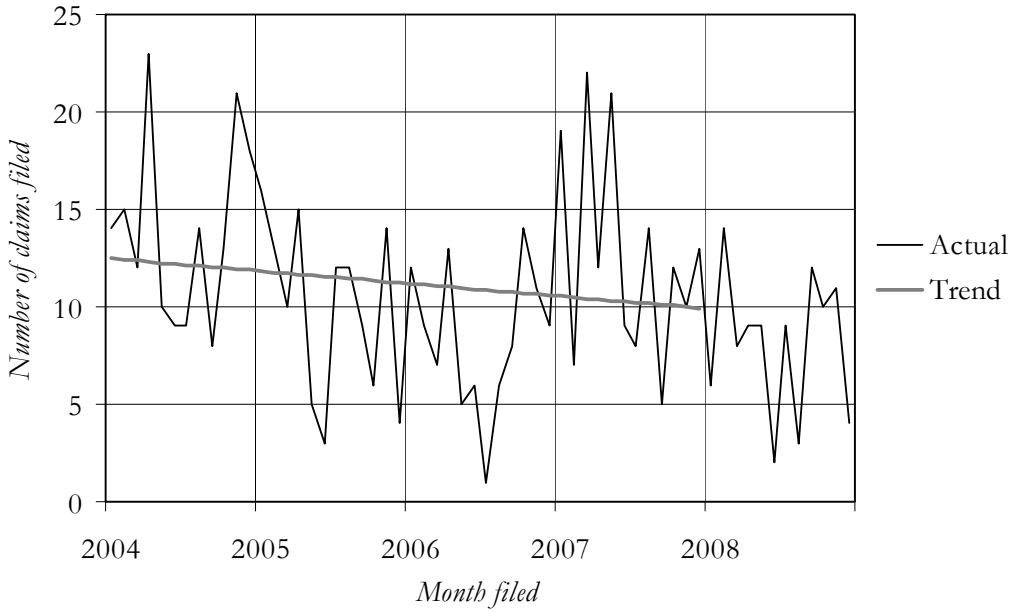


Figure B-9. Monthly Claims Volume, Personal Injury Claims

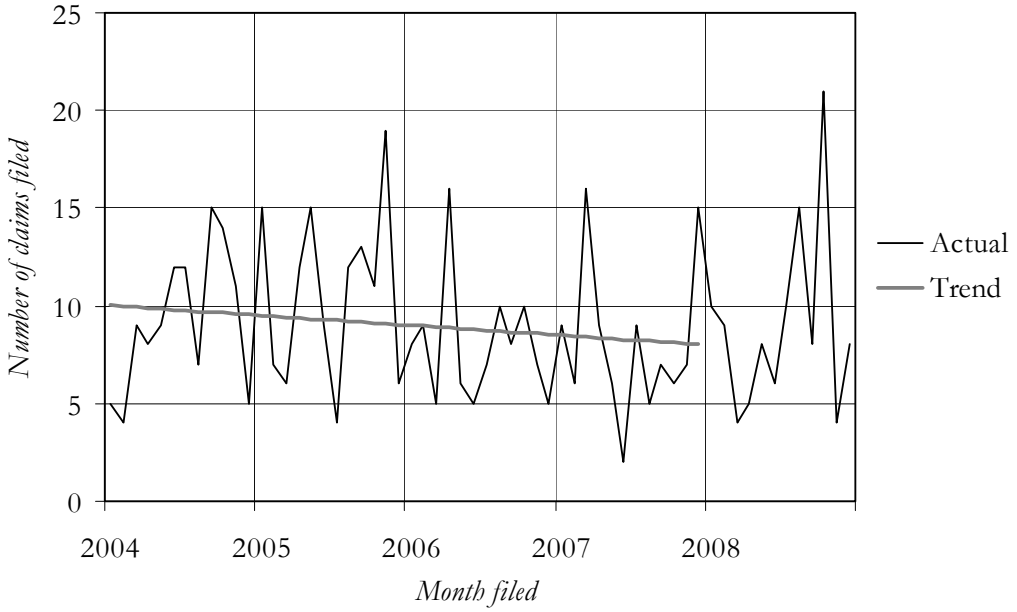
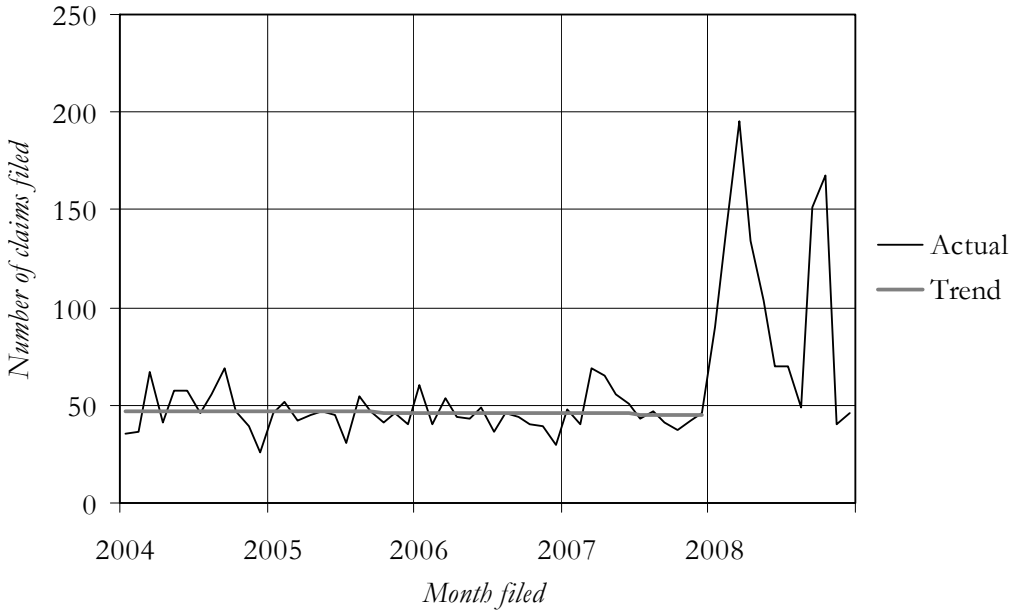


Figure B-10. Monthly Claims Volume, Property Damage Claims



Graphically, overall claims volume from 2004 through 2007 appears stable (Figure B-1). There are two spikes in claims volume in 2008, which appear among all claims, Department of Public Works claims (Figure B-5), and property damage claims (Figure B-10); the early 2008 spike consists of vehicle claims (Figure B-4), while the later spike is made up of large claims (Figure B-2). This observation is consistent with the expectation that the extreme weather of 2008 led to a spike in claims filed.

Resolution of Claims

Next we consider the resolution of claims. Claims status is recorded in the database as open, inactive, or closed. We consider inactive and closed equivalent in our analysis, because in either case the City Attorney's office has determined that no further action is required. Therefore, our measure of claims resolution is the percentage of claims *not* open on February 12, 2009.

Table B-2 summarizes the annual claims resolution percentages for the sample period, while Table B-3 shows the average time between claims filing and resolution. One would expect to find a gradual decline in the percentage of claims resolved over time (as the span between filing and the date of the report grows shorter) and a sharper decline toward the end of the period in the time between filing and resolution (particularly among claims requiring longer investigations, as they will not have had time to be processed). The data broadly support this expectation.

Both tables show summary values for the periods 2004-2006 and 2004-2008. We consider the 2004-2006 values in Table B-3 to more accurately reflect the true length of claims investigation and resolution, because 95 percent of all claims filed within this period have been resolved, compared to 85 percent of claims filed over the entire five years.

Table B-2. Percentage Of Claims Resolved, by Year Filed

	2004	*2005*	*2006*	*2007*	*2008*	*2004-2006*	*2004-2008*
By category							
Large	96%	88%	85%	62%	17%	91%	53%
Small	96%	100%	90%	83%	71%	95%	88%
Vehicle	97%	99%	91%	91%	87%	95%	92%
By department							
DPW	97%	100%	93%	92%	70%	97%	86%
Police	95%	94%	82%	66%	61%	91%	81%
All other	93%	93%	91%	85%	71%	92%	87%
By functional type							
Expenses	89%	88%	69%	58%	41%	84%	71%
Injury	96%	99%	75%	63%	38%	91%	76%
Property	98%	99%	97%	96%	74%	98%	89%
All claims	**96%**	**98%**	**90%**	**85%**	**69%**	**95%**	**85%**

Table B-3. Average Number of Days Between Filing and Resolution Among Resolved Claims, by Year Filed

	2004	*2005*	*2006*	*2007*	*2008*	*2004-2006*	*2004-2008*
By category							
Large	336	380	228	151	56	330	261
Small	148	180	92	73	79	143	120
Vehicle	96	111	103	92	90	104	97
By department							
DPW	79	108	96	90	88	94	91
Police	400	315	142	111	78	294	236
All other	52	102	136	67	67	93	84
By functional type							
Expenses	422	412	187	94	99	368	291
Injury	165	305	200	199	85	232	212
Property	70	80	86	80	86	78	81
All claims	**146**	**163**	**110**	**92**	**86**	**141**	**118**

Given the large percentage of claims still unresolved (illustrated in Figure 4-3) and the time needed to resolve some claims (one year or more), we cannot reliably evaluate trends in claims resolution.

Payment of Claims

Finally we review the payment of claims. In this analysis we consider payments made against claims filed in a given time period, rather than the dates of payment. (For example, when we say $503,235 was paid on all claims filed in 2004, it does not mean that the amount was paid in that year; payments could have been made at any time until the data were retrieved from ProLaw.) Table B-4 summarizes the percentage of claims that were paid (in whole or in part), Table B-5 displays the total amount paid through the regular claims process, and Table B-6 shows the average claims payment.

Table B-4. Percentage Of Claims Paid, by Year Filed

	2004	*2005*	*2006*	*2007*	*2008*	*Total*
By category						
Large	7%	9%	22%	13%	0%	6%
Small	17%	17%	24%	18%	16%	18%
Vehicle	39%	42%	35%	36%	22%	33%
By department						
DPW	31%	36%	34%	33%	15%	27%
Police	15%	21%	23%	15%	21%	19%
All other	30%	20%	24%	27%	31%	26%
By functional type						
Expenses	11%	10%	13%	3%	9%	9%
Injury	7%	14%	15%	12%	5%	11%
Property	36%	39%	37%	38%	18%	30%
All claims	**27%**	**31%**	**30%**	**29%**	**17%**	**25%**

Table B-5. Total Paid Against Claims (In Dollars), by Year Filed

	2004	*2005*	*2006*	*2007*	*2008*	*Total*
By category						
Large	107,821	58,596	190,466	79,726	4,000	440,609
Small	58,788	42,088	54,854	32,803	38,567	227,100
Vehicle	254,273	390,921	307,022	286,874	315,929	1,555,019
By department						
DPW	291,535	321,487	347,646	326,830	280,937	1,568,436
Police	74,912	104,421	128,907	41,423	53,973	403,637
All other	54,435	65,697	75,788	31,148	23,587	250,656
By functional type						
Expenses	64,655	62,080	96,556	2,385	9,226	234,903
Injury	42,446	121,606	83,382	37,895	21,763	307,093
Property	313,781	307,918	372,405	359,121	327,507	1,680,732
All claims	**420,883**	**491,604**	**552,342**	**399,402**	**358,497**	**2,222,728**

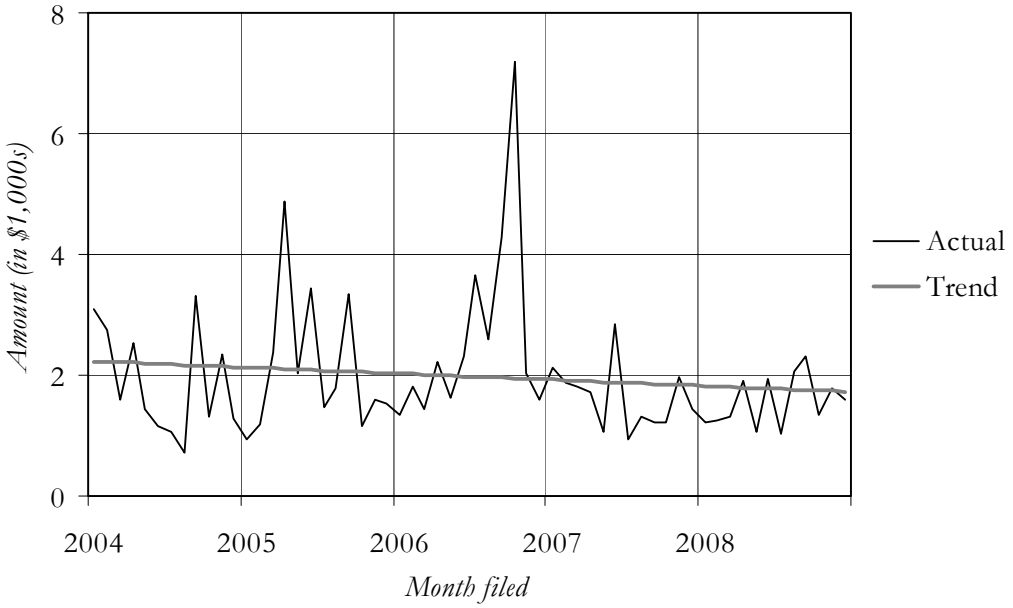
Table B-6. Average Claims Payment (In Dollars), by Year Filed

	2004	*2005*	*2006*	*2007*	*2008*	*Total*
By category						
Large	13,478	6,511	14,651	6,644	4,000	10,247
Small	1,200	1,138	1,097	841	1,015	1,066
Vehicle	1,461	2,015	1,956	1,526	1,549	1,696
By department						
DPW	1,602	1,776	2,120	1,702	1,448	1,718
Police	2,775	2,320	2,998	1,381	1,741	2,293
All other	2,474	4,693	5,830	1,832	1,310	2,984
By functional type						
Expenses	3,592	5,173	7,427	477	1,025	4,121
Injury	5,306	6,756	5,956	3,158	4,353	5,388
Property	1,531	1,466	1,930	1,618	1,430	1,587
All claims	**1,822**	**2,048**	**2,511**	**1,671**	**1,475**	**1,895**

Even with our groups defined rather broadly, payment trends cannot be identified with any statistical confidence. For our graphical analysis we examine the average payment among claims paid. As with the section on claims volume, we present monthly data and trend lines.

All claims

Figure B-11. Average Claims Payment, All Claims



By category

Figure B-12. Average Claims Payment, Large Claims

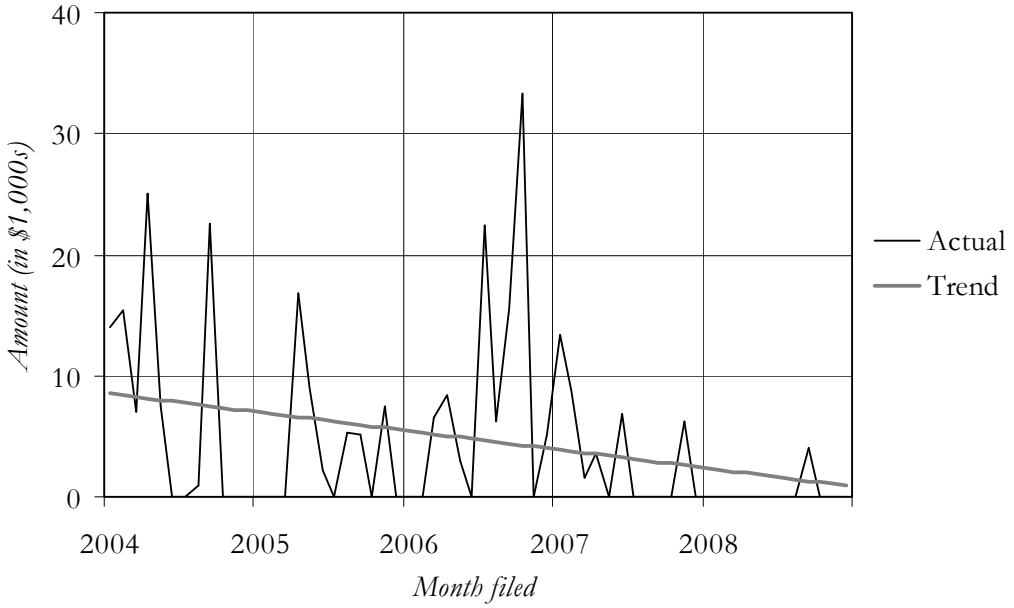


Figure B-13. Average Claims Payment, Small Claims

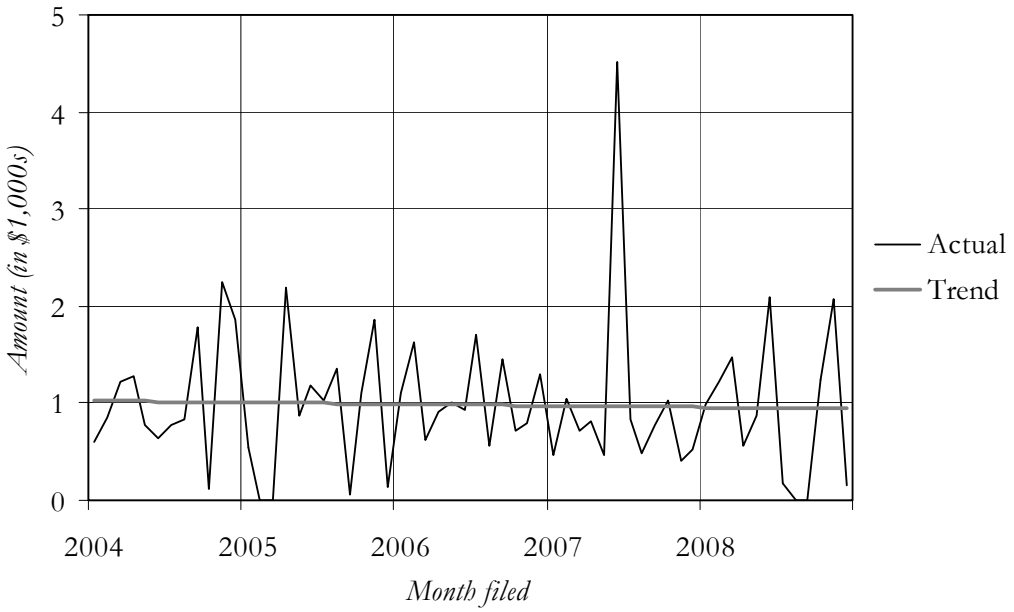
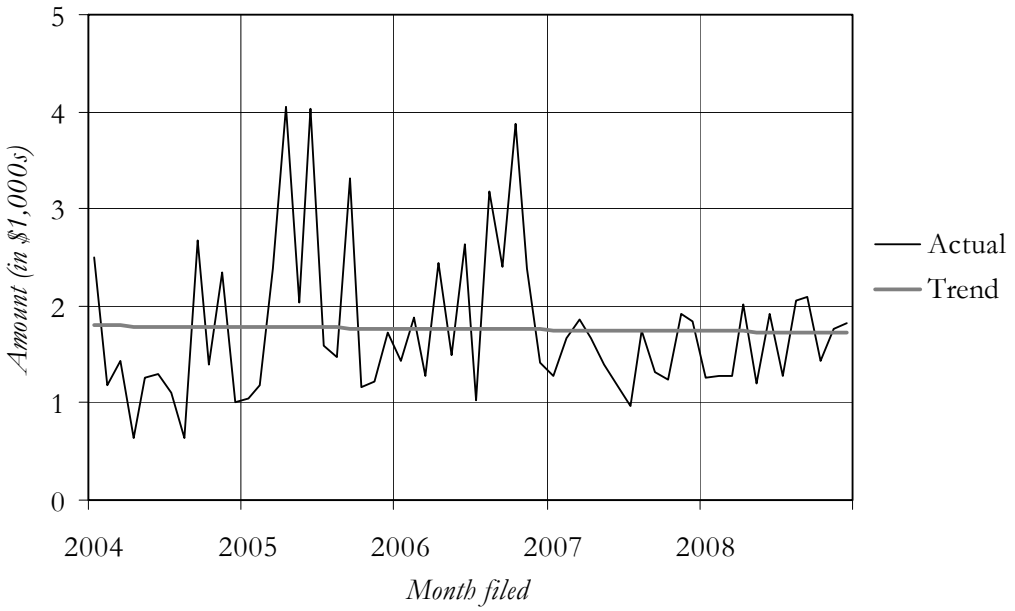


Figure B-14. Average Claims Payment, Vehicle Claims



By department

Figure B-15. Average Claims Payment, DPW Claims

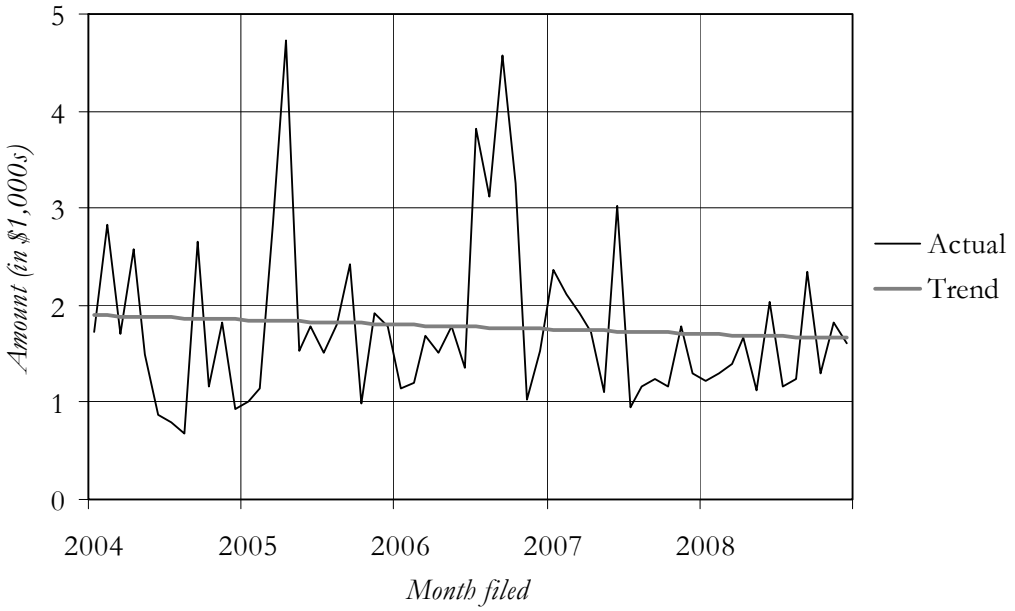


Figure B-16. Average Claims Payment, Police Dept. Claims

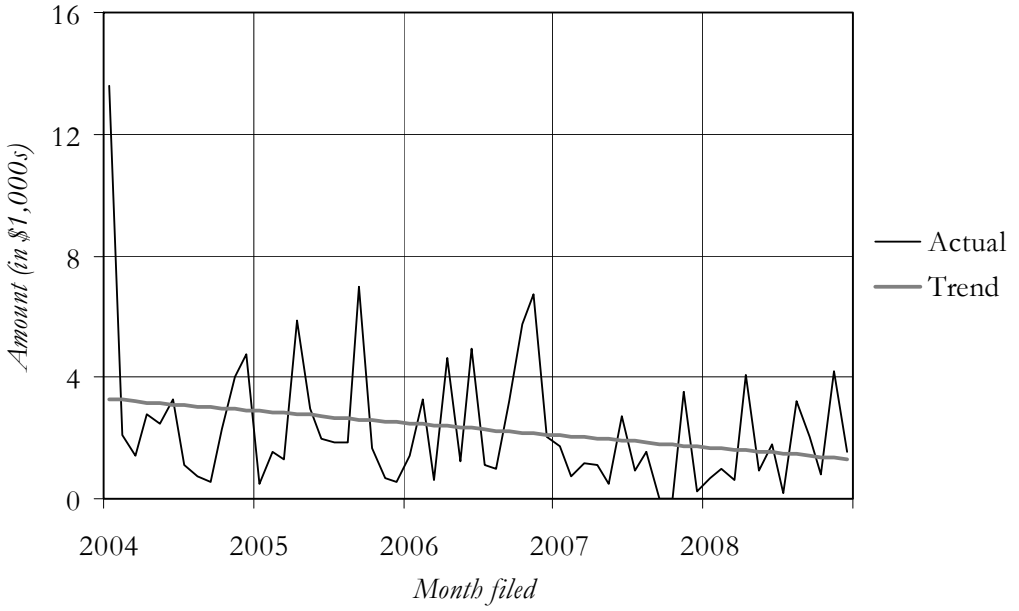
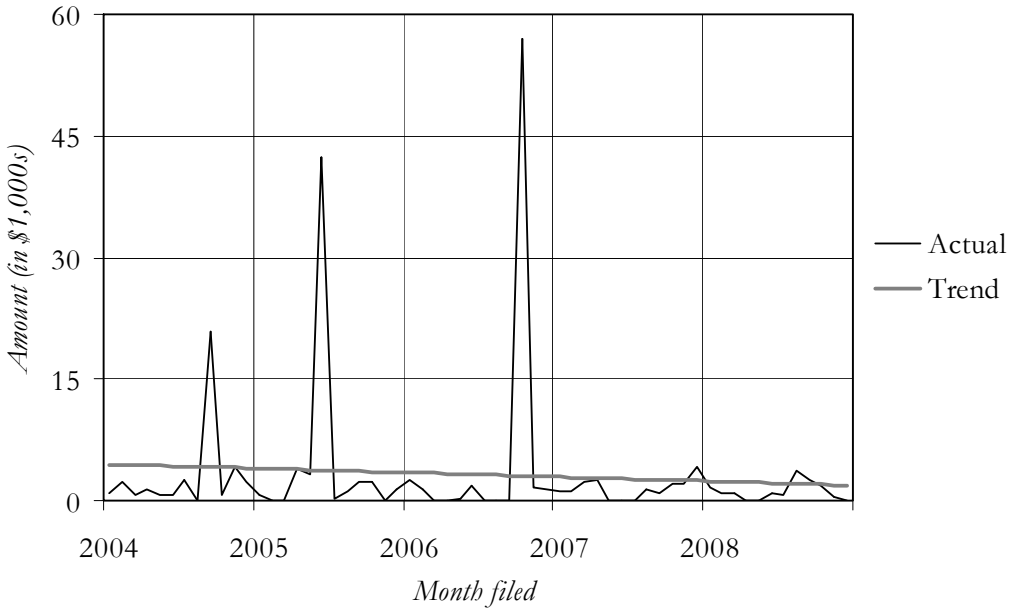


Figure B-17. Average Claims Payment, Claims Against All Other Departments



By functional type

Figure B-18. Average Claims Payment, Expenses Claims

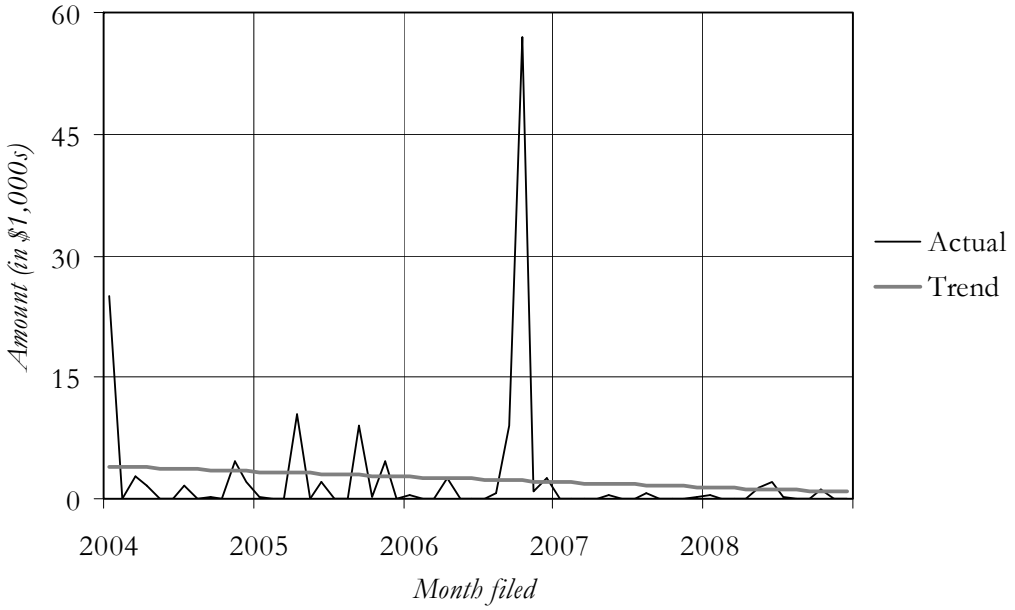


Figure B-19. Average Claims Payment, Injury Claims

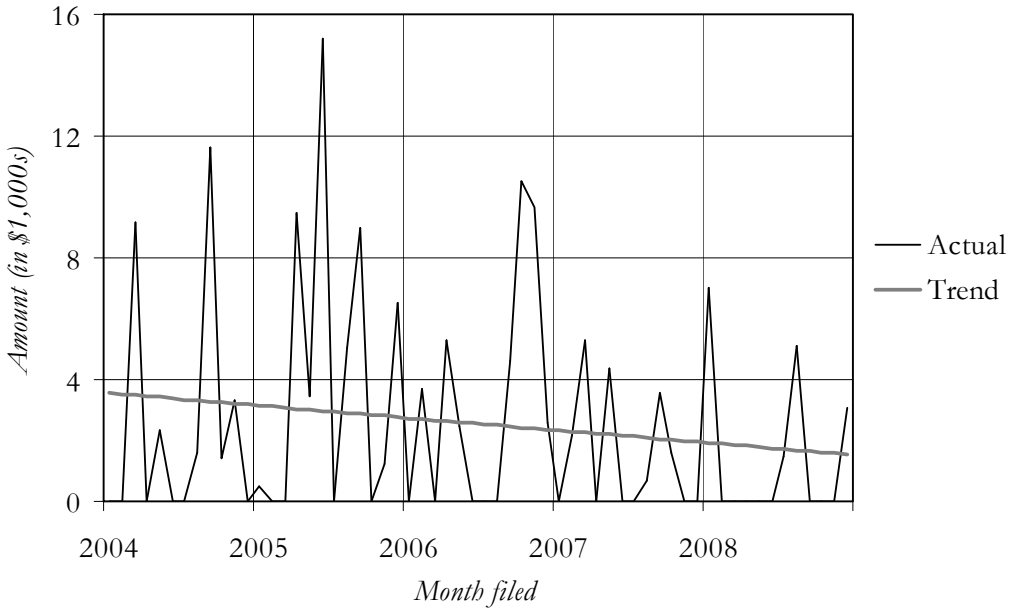
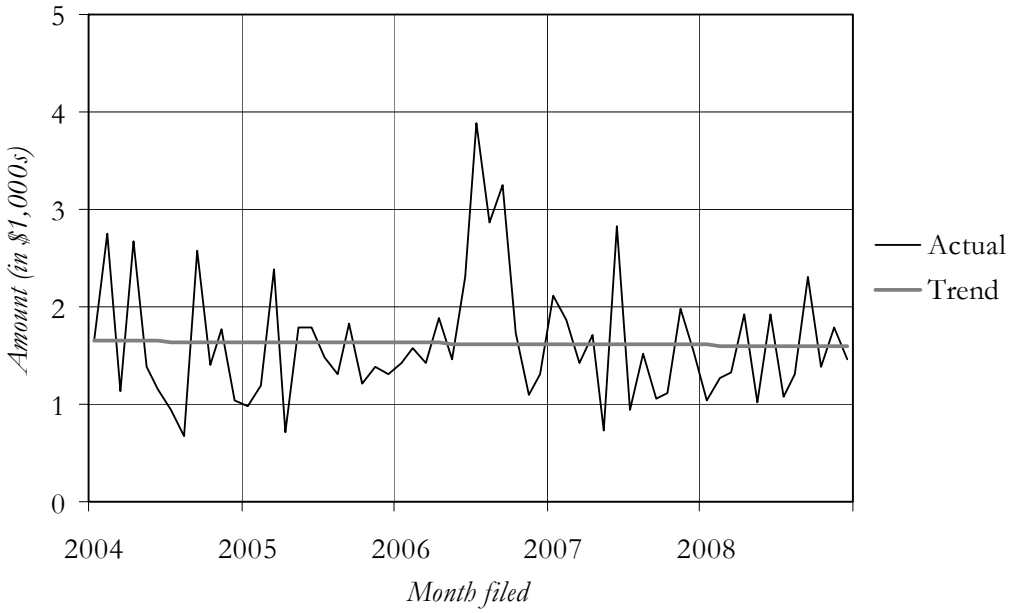


Figure B-20. Average Claims Payment, Property Claims

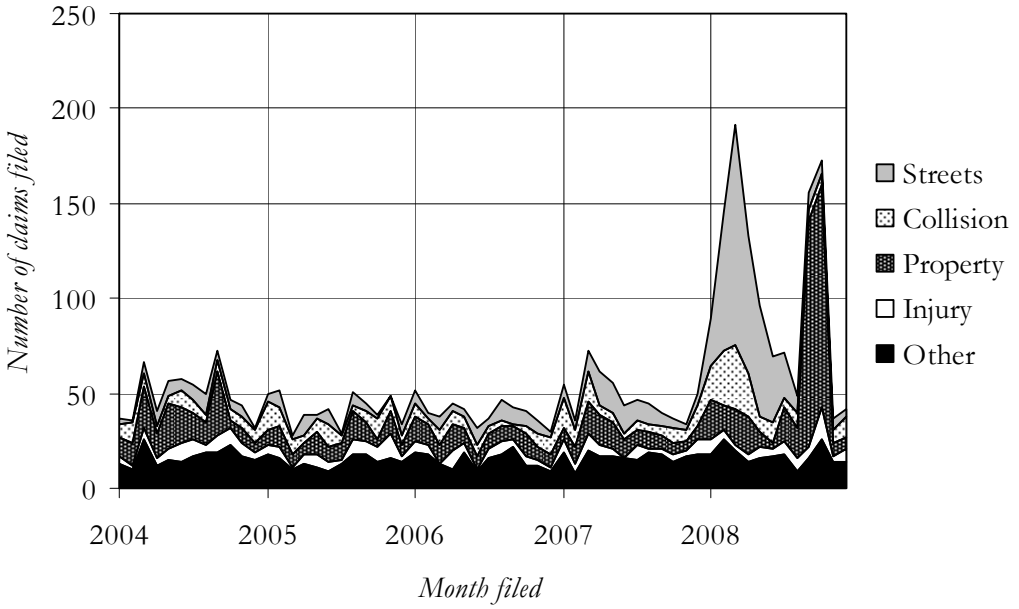


Appendix C: Trends in Claims Against the Department of Public Works

Our review of trends (see Appendix B) suggests that there may be seasonal or other weather-related trends among claims against the Department of Public Works. Because the incident date is the crucial variable in such trends, we include only claims assigned to a divisional or operational unit of the department and listing a valid incident date (i.e. a date not later than that on which the claim was filed). There are 2,951 such claims.

Each claims record includes a text description of the incident, such as "Slip and Fall –Ice/Snow" or "Vehicle Damage – Road Defect." We collapsed those descriptions into 14 categories defined by the Public Entity Risk Institute, four of which figured in more than 5 percent of cases: bodily injury, collision, property damage, and streets maintenance (2008). Figure C-1 shows claims volume over time among these incident description categories, in a stacked area chart. As in Appendix B, we find no clear trends over time apart from the apparent jump in claims in 2008.

Figure C-1. DPW Claims Volume Over Time, by PERI Category



We use data on snowfall and precipitation obtained from the Wisconsin State Climatology Office (Hopkins, personal communication, 2009) and the National Climatic Data Center (2009). Records go down to the operational unit (e.g. parking and towing, fleet operations, sanitation) but it is not possible to evaluate trends on that level with statistical significance; we only evaluate trends by division.

In our analyses of claims volume and amount paid we use linear regression. From a statistician's perspective, other methods such as Poisson regression or non-negative least squares might be more appropriate because our data are limited to discrete, non-negative values. However, linear regression is more robust and offers a more straightforward interpretation of results. Over the range of values in our data set, we consider the loss of accuracy negligible and the tradeoff acceptable.

Claims Volume

To explore seasonal and weather-related trends in claims volume, we cannot use every valid claims record in the data set because it was generated based upon filing date, not incident date. There are claims arising from incidents as early as January 2002, and there will certainly be claims for incidents prior to the end of our data set. To reduce as much as possible any bias arising from incidents not included the available data, we created bounds for the data set:

- The lower bound is straightforward. We omit any claim with an incident date before January 1, 2004, because incidents on or after that date would certainly be included.
- The upper bound is less obvious; as time moves forward, it becomes less likely that all possible claims have been filed. We find that 98.1 percent of public works claims were filed within six months of the incident date. This is a reasonable cutoff, so we omit any claim with an incident date of July 1, 2008, or later.

There are 2,747 claims within these bounds.

We performed linear regressions on the volume of claims during each of the 54 months. The variables in our regressions were:

Name	*Description*
Independent variable	
Count	Number of claims in a given month
Dependent variables	
Winter, Spring, Fall	Categorical variables for the meteorological season of the month (Summer omitted as a default value)
Precip, Snowfall	Amount of water-equivalent precipitation and snowfall in the month, in inches
$Precip^2$, $Snowfall^2$	Squares of Precip and Snowfall
Winter08	Categorical variable for period of record snowfall, December 2007 through March 2008
Jun08	Categorical variable for month of record rainfall, June 2008
Large, Vehicle	Fraction of claims filed by category (Large claims, Vehicle claims; Small claims omitted as a default value)
Inf Svcs, Ops, Water	Fraction of claims filed assigned to a particular DPW division (Infrastructure Services, Operations, Water Works; Administrative Services omitted as a default value)
Expense, Injury	Fraction of claims filed by functional type (Expenses, Personal Injury; Property Damage omitted as a default value)

The climatic data available did not separate out rain and snow within the total amount of water-equivalent precipitation reported. We included the squares of precipitation and snowfall in the regression because this adds weight in the regression to extreme amounts, which should have a greater effect on the volume of claims.

Based on separate regressions of all the seasonal and precipitation variables and each set of claims group variables (category, division, functional type), we find that statistically significant predictors of public works claims volume are Snowfall^2, Winter08, Jun08, and Inf Svcs (the fraction of claims against Infrastructure Services). We ran a regression including just these four variables; its output is as follows:

Linear regression		N=54	R^2=0.920
Variable	*Coefficient*	*Std. Err.*	*Probability*
Snowfall^2	0.06	0.01	0.000
Winter08	50.89	10.53	0.000
Jun08	232.96	15.43	0.000
Inf Svcs	64.88	13.41	0.000
Intercept	10.51	5.79	0.075

The R-squared value of this regression shows we are picking up 92 percent of the variation in monthly claims volume, indicating that this is a very strong model. The intercept can be interpreted as the base monthly volume of claims against DPW, excluding those against Infrastructure Services. To interpret the Inf Svcs coefficient we must multiply it by the fraction of all public works claims filed against Infrastructure Services, which we find is 0.4951; this translates to an average of 32.12 claims against that division per month. Jun08 shows the volume that month, while Winter08 shows the monthly volume that winter without taking into account the amount of snowfall each month. The interpretation of Snowfall^2 is direct (square the number of inches of snowfall, then multiply by 0.06) but less intuitive; it translates to 8.45 additional claims in a month with 12 inches of snow, 33.80 additional with 24 inches of snow, or 76.06 with 36 inches of snow.

Likelihood of Payment

Claims payment is a binary variable: either a claim is paid, or it is not. Analyzing the factors contributing to whether a claim is paid requires logistic analysis, which evaluates probabilities relating to binary outcomes. For this analysis we are able to use all 2,951 Department of Public Works claims with incident dates. We find that on average 30.2 percent of claims are paid.

We performed logit regressions on whether claims were paid with these variables:

Name	*Description*
Independent variable	
Paid	Categorical variable indicating the claim was paid (the amount paid is greater than zero)
Dependent variables	
Open_Mo_60	Ordinal variable for the month in which the claim was filed (0=Jan. 2004, 59=Dec. 2008)
Inc_to_Open	Months from incident to filing of claim
Open_to_Res	Months from filing to resolution of claim
Amt_1000s	Amount of claims demand, in thousands of dollars
Log_Demand	Natural log of the amount of claims demand, in dollars
Precip, Snowfall	Amount of water-equivalent precipitation and snowfall in the month of the incident, in inches
$Precip^2$, $Snowfall^2$	Squares of Precip and Snowfall
Winter, Spring, Fall	Categorical variables for the meteorological season of the incident date (Summer omitted as a default value)
Winter08	Categorical variable for incident occurring period of record snowfall, December 2007 through March 2008
Jun08	Categorical variable for incident occurring in month of record rainfall, June 2008
Large, Vehicle	Categorical variables for category (Large claims, Vehicle claims; Small claims omitted as a default value)
Inf Svcs, Ops, Water	Categorical variables for a particular DPW division (Infrastructure Services, Operations, Water Works; Administrative Services omitted as a default value)
Expense, Injury	Categorical variables for functional type (Expenses, Personal Injury; Property Damage omitted as a default value)

We took the natural log of the amount demanded as a variable; just as taking the square emphasizes extreme values, taking the log deemphasizes extreme values. As with our analysis of claims volumes, we first performed separate regressions for each set of claims groups (category, division, and functional type). Not all were statistically significant. We can include all of the claims group variables because logistic analysis compares membership against non-membership separately for each variable. The output of our final logit regression is as follows:

Logit regression		N=2,696		Pseudo-R^2=0.299	
		df=16		P(χ^2)=0.000	
Variable	*Coeff.*	*Prob.*	*Variable*	*Coeff.*	*Prob.*
Open_Mo_60	-0.014	0.000	Vehicle	-0.404	0.014
Inc_to_Open	-0.128	0.000	Inf Svcs	-1.737	0.000
Precip	0.142	0.049	Ops	0.933	0.000
$Precip^2$	-0.025	0.000	Water	0.287	0.288
Log_Demand	0.183	0.000	Injury	-2.174	0.000
Intercept	-0.766	0.008	Expense	-1.369	0.000

This model is not as good as our claims volume model; it picks up only 30 percent of the variation in whether a claim is paid. Interpreting logit coefficients is less straightforward than linear coefficients:

- Roncek and Swatt demonstrate that for continuous variables (those indicating a numerical value such as "inches of precipitation") and ordinal variables (those indicating an ordered sequence of values, such as month 1, month 2, etc.) the logit coefficient multiplied by 100 shows the percentage change in odds for a one-unit change in the variable (2006, p. 1). For example, if a claim is filed in a month with 4 inches of precipitation, the percentage change in odds is $(4 \times 14.2) + (4^2 \times -2.5) = 56.8 - 40 = 16.8$ percent.

- For "categorical variables" (those where a value of 1 indicates membership in a given category) the coefficients β can be converted to odds ratios by taking *e* (the mathematical constant, approximately equal to 2.718) to the power β. An odds ratio is the ratio of the likelihood of an event within a category to the likelihood outside that category; an odds ratio of 1 means the events are equally likely. For example, the vehicle coefficient -0.404 gives an odds ratio of 0.667, which means that a vehicle claim is 33 percent less likely to be paid than a large or small claim.

Amount of Payment

The presence of seasonal or weather-related trends in the amount paid would suggest that some climatic conditions result in costlier claims than others. We explore trends in the amount paid against a claim, given that it was paid. There were 813 claims paid against the Department of Public Works, with an average payment of $1,695.

We performed linear regressions on the amount paid. Our variables were:

Name	*Description*
Independent variable	
Amount	Amount paid against the claim, in dollars
Dependent variables	
Open_Mo_60	Ordinal variable for the month in which the claim was filed (0=Jan. 2004, 59=Dec. 2008)
Inc_to_Open	Months from incident to filing of claim
Open_to_Res	Months from filing to resolution of claim
Amt_1000s	Amount of the claims demand, in thousands of dollars
Log_Demand	Natural log of the amount of the claims demand, in dollars
Precip, Snowfall	Amount of water-equivalent precipitation and snowfall in the month of the incident, in inches
$Precip^2$, $Snowfall^2$	Squares of Precip and Snowfall
Winter, Spring, Fall	Categorical variables for the meteorological season of the incident date (Summer omitted as a default value)
Winter08	Categorical variable for incident occurring period of record snowfall, December 2007 through March 2008
Jun08	Categorical variable for incident occurring in month of record rainfall, June 2008
Large, Vehicle	Categorical variables for category (Large claims, Vehicle claims; Small claims omitted as a default value)
Inf Svcs, Ops, Water	Categorical variables for a particular DPW division (Infrastructure Services, Operations, Water Works; Administrative Services omitted as a default value)
Expense, Injury	Categorical variables for functional type (Expenses, Personal Injury; Property Damage omitted as a default value)

We do not find that any of the seasonal or climatic variables are statistically significant predictors of the amount paid. However, both the length of investigation (Open_to_Res) and the amount demanded (both Amt_1000s and Log_Demand) have a significant relationship with the amount paid. A linear regression with only those variables gives the following output:

Linear regression		N=813	R^2=0.381	*Mean from data set*
Variable	*Coefficient*	*Std. Err.*	*Probability*	
Open_to_Res	215.38	22.26	0.000	2.954
Amt_1000s	-0.32	0.12	0.011	24.76
Log_Demand	844.68	49.46	0.000	6.787
Intercept	-4,666.86	334.37	0.000	
			Amount paid	$1,694.82

We can also run linear regressions with those variables plus categorical variables for each group of claims (category, division, functional type):

Linear regression		N=813	R^2=0.471
By category			Default = Small
Variable	*Coefficient*	*Std. Err.*	*Probability*
Open_to_Res	146.68	21.71	0.000
Amt_1000s	-0.19	0.12	0.104
Log_Demand	698.43	47.46	0.000
Vehicle	339.98	186.33	0.068
Large	4,931.32	428.29	0.000
Intercept	-3,929.70	349.18	0.000

Linear regression		N=813	R^2=0.386
By division			Default = Admin Svcs
Variable	*Coefficient*	*Std. Err.*	*Probability*
Open_to_Res	213.17	22.82	0.000
Amt_1000s	-0.31	0.12	0.014
Log_Demand	828.63	50.25	0.000
Inf Svcs	759.26	322.59	0.019
Ops	502.63	260.07	0.054
Water	616.70	346.78	0.076
Intercept	-5,047.63	380.18	0.000

Linear regression		N=813	R^2=0.387
By functional type			Default = Property
Variable	*Coefficient*	*Std. Err.*	*Probability*
Open_to_Res	192.82	23.81	0.000
Amt_1000s	-0.36	0.12	0.004
Log_Demand	841.61	49.48	0.000
Injury	1,138.86	418.96	0.007
Expense	359.26	523.52	0.493
Intercept	-4,631.07	334.73	0.000

The basic model picks up 38 percent (the R-squared value) of the variation in the data. Only the model adding claims categories provides a significant increase in the quality, increasing the variation explained to 47 percent. The Open_to_Res, Amt_1000s, and Log_Demand coefficients can be interpreted as the change in the amount paid (in dollars) per unit change in the variables. The coefficients of the categorical variables indicate the difference in the average claims award between the default category and that category. (An interesting artifact of these regressions is the miniscule size yet strong significance of the Amt_1000s coefficient.)

Appendix D: Benchmarking Data and Methodology

We selected a number of target cities from which we attempted to obtain comparative claims data. We sought data primarily from northern-tier cities, based on the theory held by City of Milwaukee staff that claims are driven heavily by weather factors. (Our analysis bears out this assumption.) Green Bay and Madison are the second and third largest cities in Wisconsin. Both have the same state legal claims laws as Milwaukee and have similar weather. Baltimore is approximately the same size as Milwaukee and is used as a comparison city by the City of Milwaukee for other purposes (Pearson, personal communication, 2009). Cleveland and Pittsburgh are slightly smaller than Milwaukee but have similar seasonal weather.

Table D-1. Comparison Cities for Benchmarking Analysis

City	*Population (2007 est.)*	*Average annual snowfall (inches)*
Milwaukee	602,191	47.3
Green Bay	100,781	47.7
Madison	228,775	44.1
Baltimore	637,455	20.8
Cleveland	438,042	56.9
Pittsburgh	311,218	43.0

Sources: U.S. Census Bureau (2008), National Climatic Data Center (2008)

Partially Self-Insured Cities

Green Bay and Madison are the only cities we obtained information from that are not entirely self-insured. Green Bay uses the Cities and Villages Mutual Insurance Company (CVMIC) to pay claims costs in excess of $150,000 for a single occurrence, up to $5 million. Any amount exceeding the $5 million cap will be covered by the Insurance Company of Pennsylvania, up to $10 million. In 2009 the self-insured retention rate (essentially a deductible) will increase from $150,000 to $175,000. It is rare that CVMIC pays a claim for Green Bay, and none of the claims in our sample exceeded the $150,000 minimum (Carpenter, personal communication, 2009).

Similar to Green Bay, Madison pays yearly premiums for liability insurance. Madison uses Wisconsin Municipal Mutual Insurance Company (WMMIC). WMMIC is a public entity risk pool that provides protection against large claims. Madison self-insures for all claims under $300,000 per occurrence, and WMMIC will pay any claim in excess of $300,000, up to $1.5 million. None of the claims in the Madison sample exceeded the $300,000 limit (Veum, personal communication, 2009).

Self-Insured Cities

Cleveland, Baltimore, and Pittsburgh all self-insure for all claims.

Baltimore negligence claims have a limit of $200,000 per claim and $500,000 per occurrence. Maryland law requires claims to be filed within 180 days of the incident date. The Baltimore Claims Department tries to process these claims within 30 days. Police claims typically go through the police department and are then sent to the claims division to be processed. There are no requirements on the duration of time the police department can hold onto these claims (King, personal communication, 2009). As a result, the consistency of the police claims data from year to year is suspect.

Pittsburgh has a cap of $500,000 per claim and per occurrence. Pennsylvania law requires claims to be filed within six months of the incident date (Public Risk Management Association, 2008). All claims greater than $2,500 need to be approved by the municipal council prior to payment (DeSimone, personal communication, 2009).

Cleveland (Ohio state law) requires all individuals who file property or physical injury claims to be covered by insurance. If insurance covers the injury or the damage to property, then the city will only pay a claim equal to the deductible. Those filing claims not covered by insurance or who are not insured, will have a claim honored if they can prove the presence of an insurance plan would not have covered the accident. Otherwise, the city will not honor the request. Furthermore, the city is not liable for physical harm incurred on sidewalks that border private or commercial property (Jones, personal communication, 2009). Ohio law has a limit of $250,000 per claim for non-economic damages (Public Risk Management Association, 2008).

Obtaining directly comparable data from self-insured cities was a difficult process for several reasons. Most cities of Milwaukee's size self-insure. This means they manage their own claims process, and their attorneys see little reason to voluntarily provide sensitive data to unknown analysts, for no immediate or apparent gain. The entire claims/settlement process takes place in an adversarial legal environment, and cities, as defendants, especially have a direct interest in assuring that information about claims and the claims process is carefully controlled.

Benchmarking Process

Using Milwaukee departments and the PERI data format as a template, similar departments and sub-departments in Madison, Baltimore, Green Bay, and Pittsburgh were pooled to improve the accuracy of data comparisons. Aside from the list of divisions under Milwaukee Department of Public Works in Figure 3-1, other divisions from surveyed cities that are included in public works were; municipal electric utility, parks and recreation, parking, streets, signs, lights, alleys, sidewalks, trees, highway engineering, general public works, miscellaneous public works, and claims against the director of the public works department. Police claims included; investigations, school police, criminal investigation, field operations, and sheriff's departments.

A majority of the City of Madison police claims were coded only as a directional location, identifying the police zone where the incident occurred. That is, any claim in the data identified as north, east, south, west, or central was assumed to be a police claim (Veum, personal communication, 2009). For all cities, any claims that were not listed specifically as originating in the police department or the public works department or subdivision were categorized as "other." This category had the greatest variety of subdivisions. Madison and Green Bay had significantly smaller array of subdivisions in comparison to the Milwaukee and the other large cities. The primary subdivisions included in the other category include; fire, emergency medical, arts and culture, library, and transportation.

After these claims were pooled into one of the three categories (public works, police, or "Other") they were adjusted to account for differences in population, city expenditures, and size of workforce. Data were normalized across three dimensions: per 1,000 full-time equivalent workforce, per 1,000 residents, and per $10,000 of city budget expenditure. For instance, under the claim amount paid, a result of 3.20 in the year 2004 for Milwaukee Public Works is interpreted to be $3.20 in public works claims payouts per $10,000 of total city budgeted expenditure. With the substantial variation in claims from year to year, the averages for the comparison figures were calculated to assist in our evaluation. Since Cleveland data for "claims paid" and "total amount paid" omitted data from 2006, the Cleveland averages are divided by four years instead of five. The following tables provide the factors used to normalize data:

Table D-2. Full-Time Equivalent Workforces of Benchmark Cities

	2004	*2005*	*2006*	*2007*	*2008*
Milwaukee	6,812	6,604	6,703	6,793	6,800
Baltimore	15,385	15,246	15,137	15,330	15,326
Green Bay	803	785	769	760	760
Madison	2,742	2,743	2,736	2,754	2,773
Cleveland	8,632	8,502	[1]	8,580	8,842
Pittsburgh	3,312	3,007	3,221	3,281	3,281[2]

Note: Omits personnel for Special Purpose Accounts, pensions.

1 Omitted.

2 Data unavailable; 2007 figure used.

Sources: Baltimore, 2008a; Cleveland, 2007b; Foeller, personal communication, 2009; Hutchinson, personal communication, 2009; Madison, 2007b; Milwaukee, 2007b and 2009b; Pilsner, personal communication, 2009; Pittsburgh, 2007.

Table D-3. Populations of Benchmark Cities

	2004	*2005*	*2006*	*2007*	*2008*[1]
Milwaukee	599,252	600,787	602,782	602,191	602,191
Baltimore	641,004	640,064	640,961	637,455	636,919
Green Bay	100,988	100,819	100,656	100,781	100,781
Madison	221,787	223,719	226,011	228,775	228,775
Cleveland	456,489	450,046	[2]	438,042	438,042
Pittsburgh	320,833	316,615	313,668	311,218	311,218

1 2007 Census estimates used for all cities except Baltimore.

2 Omitted.

Sources: U.S. Census Bureau, 2008; Baltimore, 2008a.

Table D-4. Operating Budgets of Benchmark Cities (in $1,000s)

	2004	*2005*	*2006*	*2007*	*2008*[1]
Milwaukee	596,505	642,437	647,910	664,904	708,137
Baltimore	1,794,827	1,781,610	1,915,460	2,015,670	2,092,131
Green Bay	87,132	91,124	92,521	94,248	97,998
Madison	188,975	191,300	197,495	213,102	224,005
Cleveland	1,067,303	1,103,491	[1]	1,153,223	1,183,461
Pittsburgh	372,320	400,946	434,526	423,755	416,667

Note: Omits personnel for Special Purpose Accounts, pensions.
1 Omitted.
Sources: Baltimore, 2006, 2007, 2008b, and 2009; Cleveland, 2004, 2005, 2006, 2007a, and 2008; Green Bay, 2008; Madison, 2006, 2007a, 2008, and 2009; Milwaukee, 2005, 2006, 2007b, 2008, 2009a; Pittsburgh, 2006 and 2009.

Our findings are shown in Tables D-5 through D-8 on pages 63 and 64.

Public Works Claims

Milwaukee paid claims at a lower rate compared to Madison during 2007 and 2008. Both cities had an increase in the number of claims filed, but Milwaukee's claims filed per resident and per full-time equivalent workforce was nearly double that of Madison. Milwaukee's costs incurred were lower in comparison to Madison in both 2007 and 2008, suggesting the city may have done a better job handling the increase in claims from the winter storm.

"Other" Claims

The "other" claims category covers a variety of departments across all of the cities. Due to the diversity of departments and functions considered, these comparisons have less interpretive value then the public works or police claims categories. Milwaukee's average claims filed per thousand residents is virtually the same as Madison and Green Bay, and is lower than Baltimore and Pittsburgh. Baltimore public schools are included in this category, which may explain the higher rate reported. The average rate paid by Milwaukee is below that reported by Madison and greater than that of Pittsburgh. This is the only category where Milwaukee has a lower number of claims filed but the cost incurred is near the highest of the five cities. Pittsburgh is the only city that had more "other" claims then police claims. The dominant subcategories in Pittsburgh were emergency medical and fire services (DeSimone, personal correspondence, 2009).

Table D-5. Claims Benchmarking Data, All Claims

City	*Claims volume per 1,000 FTE employees*						*Claims volume per 1,000 residents*						*Amount ($) paid per $10,000 of expenditures*					
	2004	*2005*	*2006*	*2007*	*2008*	*Avg.*	*2004*	*2005*	*2006*	*2007*	*2008*	*Avg.*	*2004*	*2005*	*2006*	*2007*	*2008*	*Avg.*
Milwaukee	125.9	118.9	107.7	122.8	214.9	138.0	1.4	1.3	1.2	1.4	2.4	1.5	8.4	8.4	8.8	6.2	5.2	7.4
Green Bay	129.5	127.4	111.9	150.1	147.4	133.2	1.0	1.0	0.9	1.1	1.1	1.0	5.6	8.1	5.0	4.3	6.7	5.9
Madison	53.6	59.4	53.0	73.7	93.4	66.6	0.7	0.7	0.6	0.9	1.1	0.8	15.3	11.4	9.2	14.8	10.9	12.3
Baltimore	102.4	140.6	154.8	130.2	156.5	136.9	2.5	3.4	3.7	3.1	3.8	3.3	3.3	4.2	6.4	6.0	10.1	6.0
Cleveland	108.4	119.3	-	94.1	115.7	109.4	2.1	2.3	-	1.8	2.3	2.1	3.3	4.1	-	3.0	1.9	3.1
Pittsburgh	135.3	133.4	118.9	131.1	165.5	136.8	1.4	1.3	1.2	1.4	1.7	1.4	2.6	3.0	3.1	4.9	5.2	3.7

Table D-6. Claims Benchmarking Data, Police Claims

City	*Claims volume per 1,000 FTE employees*						*Claims volume per 1,000 residents*						*Amount ($) paid per $10,000 of expenditures*					
	2004	*2005*	*2006*	*2007*	*2008*	*Avg.*	*2004*	*2005*	*2006*	*2007*	*2008*	*Avg.*	*2004*	*2005*	*2006*	*2007*	*2008*	*Avg.*
Milwaukee	27.2	32.9	27.6	28.6	22.2	27.7	0.3	0.4	0.3	0.3	0.3	0.3	1.3	1.6	2.0	0.6	0.8	1.3
Green Bay	23.7	26.8	23.4	31.6	14.5	24.0	0.2	0.2	0.2	0.2	0.1	0.2	1.5	1.8	2.2	1.8	0.9	1.6
Madison	25.2	29.9	16.8	8.7	10.8	18.3	0.3	0.4	0.2	0.1	0.1	0.2	8.7	7.7	5.4	2.1	1.0	5.0
Baltimore	18.3	26.4	36.4	26.6	41.8	29.9	0.4	0.6	0.9	0.6	1.0	0.7	1.1	1.4	2.2	1.2	4.7	2.1
Pittsburgh	13.3	8.0	14.3	14.3	14.9	13.0	0.1	0.1	0.2	0.2	0.2	0.1	0.4	0.4	0.4	0.5	0.3	0.4

Table D-7. Claims Benchmarking Data, Public Works Claims

City	*Claims volume per 1,000 FTE employees*						*Claims volume per 1,000 residents*						*Amount ($) paid per $10,000 of expenditures*					
	2004	*2005*	*2006*	*2007*	*2008*	*Avg.*	*2004*	*2005*	*2006*	*2007*	*2008*	*Avg.*	*2004*	*2005*	*2006*	*2007*	*2008*	*Avg.*
Milwaukee	87.3	75.3	72.1	85.1	184.1	100.8	1.0	0.8	0.8	1.0	2.1	1.1	4.9	5.0	5.4	4.9	4.0	4.8
Green Bay	95.8	85.3	71.6	109.3	122.4	96.9	0.8	0.7	0.6	0.8	0.9	0.7	3.5	5.6	2.3	2.5	5.8	3.9
Madison	22.6	20.1	31.1	55.9	75.0	40.9	0.3	0.3	0.4	0.7	0.9	0.5	4.9	2.2	3.0	11.9	9.4	6.3
Baltimore	71.8	97.1	94.7	82.8	88.8	87.0	1.7	2.3	2.2	2.0	2.1	2.1	1.7	2.1	3.0	3.8	4.1	3.0
Pittsburgh	100.5	104.4	84.8	100.3	123.1	102.6	1.0	1.0	0.9	1.1	1.3	1.1	1.9	2.2	2.2	3.7	4.3	2.9

Table D-8. Claims Benchmarking Data, Other Claims

City	*Claims volume per 1,000 FTE employees*						*Claims volume per 1,000 residents*						*Amount ($) paid per $10,000 of expenditures*					
	2004	*2005*	*2006*	*2007*	*2008*	*Avg.*	*2004*	*2005*	*2006*	*2007*	*2008*	*Avg.*	*2004*	*2005*	*2006*	*2007*	*2008*	*Avg.*
Milwaukee	10.7	10.8	8.1	9.1	8.5	9.4	0.1	0.1	0.1	0.1	0.1	0.1	0.9	1.0	1.2	0.5	0.3	0.8
Green Bay	10.0	15.3	16.9	7.9	10.5	12.1	0.1	0.1	0.1	0.1	0.1	0.1	0.7	0.7	0.5	0.0	0.0	0.4
Madison	5.8	9.5	5.1	9.1	7.6	7.4	0.1	0.1	0.1	0.1	0.1	0.1	1.8	1.5	0.8	0.8	0.5	1.1
Baltimore	12.4	17.1	23.7	20.8	26.0	20.0	0.3	0.4	0.6	0.5	0.6	0.5	0.5	0.7	1.1	1.0	1.3	0.9
Pittsburgh	21.4	21.0	19.9	16.5	27.4	21.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.5	0.5	0.7	0.7	0.5