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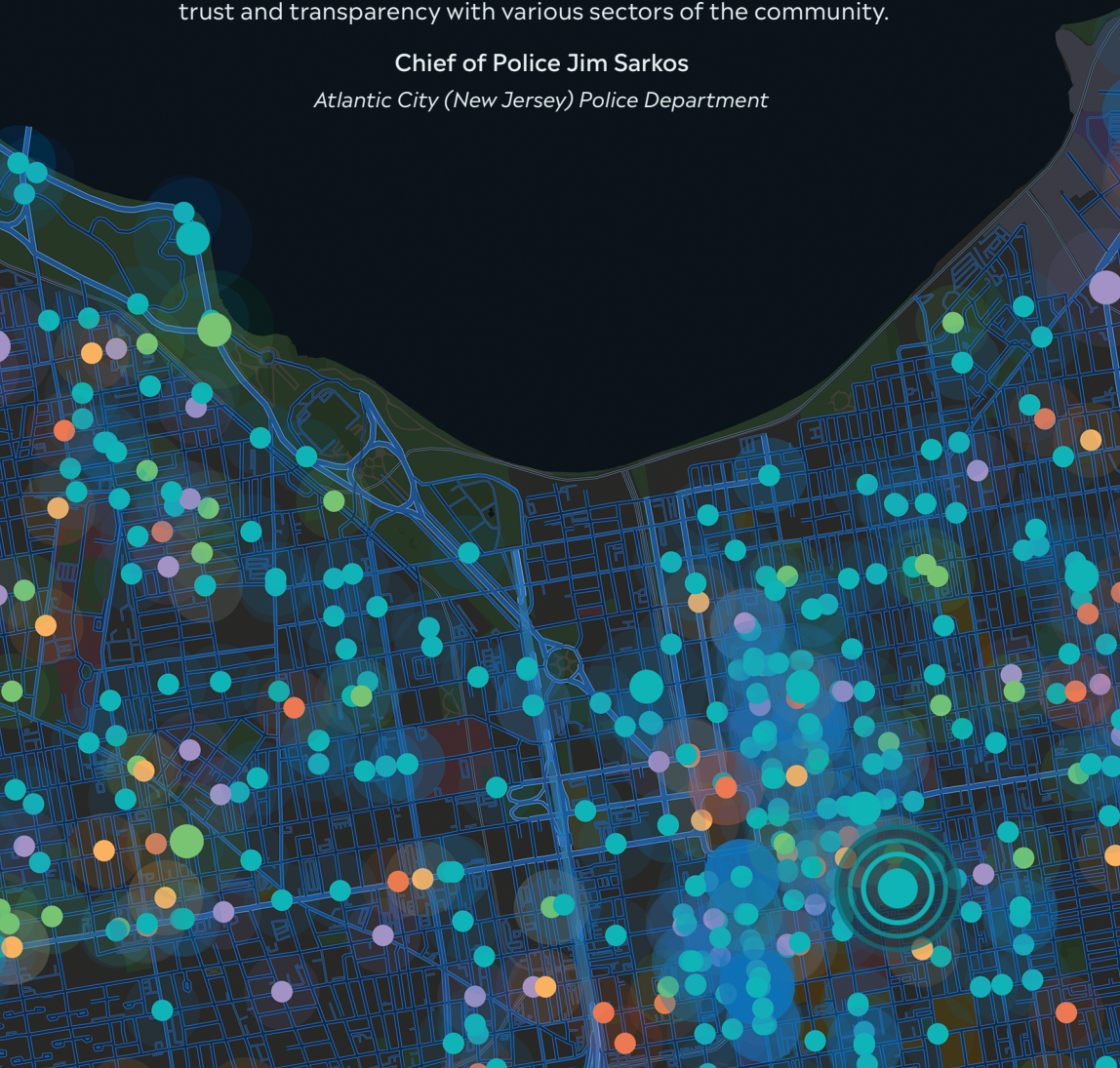
Section 1

Why commanders need crime analysis and GIS

Modern policing demands the analysis of crime as a crucial component for data-driven decision-making by today's progressive law enforcement leaders. Successful utilization of crime and spatial analysis allows for the most efficient and effective deployment of precious police resources for crime reduction. Moreover, disciplined application of analysis can often lead to opportunities that increase trust and transparency with various sectors of the community.

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Crime analysis has transformed substantially over the last 30 years. The ever-rapid advances in technology and seemingly endless sources of available data have redefined crime analysis and the role it plays in modern policing. What was once seen as a luxury or, worse, unnecessary, has become a bona fide profession whose contribution has taken a permanent seat at the table of all law enforcement agencies.

Today, GIS and crime analysis connect all involved in public safety.

This means an increasing number of police departments of all shapes and sizes from across the globe are embracing the power of data-driven policing strategies. Crime analysis and GIS can assimilate data, analyze it, communicate the results, and enhance public safety (that is, not just law enforcement) through mechanisms that promote problem-solving and accountability. Many agencies use GIS and other tools, but they are often used for only basic needs, such as knowing where and when crime occurred. This approach has benefits, but commanders and analysts can do so much more, including being more forward-thinking and even preventive. It is no exaggeration to say that analytics and GIS can provide agencies with the ability to dramatically improve or, if necessary, completely change the way they serve their communities.

As mentioned in the preface, consider the myriad police-related data systems and the array of information they collect—calls for service, crime and arrest locations, offender records, or all the sensor data collected from cameras and other systems. The common thread tying all these systems and sensors together is *location*. The modern police agency must harness the power of analysis, including spatial analytics specifically, to make smarter decisions through implementing a holistic location-based strategy.

GIS and crime analysis—no longer a luxury

Before we dive into all that GIS and analysis have to offer, we should begin by answering what is arguably the most important question of all: Why do you need them in the first place?

Wexler et al. (2007, 32) recommend that commanders should take it upon themselves to become knowledgeable about how data facilitates problem-solving efforts. The US Department of Justice's *Police Crime Analysis Unit Handbook* agrees, stating that crime analysis can be a preeminent means to guide operations and “provide the nucleus of data support for dynamic

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police command and control” (Buch, Austin, and Cooper 1973, 5). This statement sums up the power of crime analysis and GIS while implying that commanders’ authority and perspectives can and should embed analysis in an agency’s day-to-day operations.

As you may have noticed, the last recommendation from the Department of Justice was made *in 1973*.

So here we are, more than 50 years later. On one hand, great strides have been made in crime analysis and its adoption in law enforcement. But on the other hand, an honest look at the core operations of most departments shows that they tend to be reactive and driven primarily by public demands for service, namely through 911 in the United States and equivalent systems in other regions of the world.

This standard model of policing, as it’s called, tends to be the prevailing method of service delivery, particularly in the United States, where a “one size fits all” approach of reactive strategies is used to suppress crime (Weisburd and Eck 2004). Tenured law enforcement practitioners will likely agree that much of the core of policing has operated all but unchanged for decades.

Despite research showing poor evidence of effectiveness for standard model approaches (Kelling et al. 1974; Spelman and Brown 1984), they are frequently the bread-and-butter response to the variety of problems police encounter, irrespective of context or complexity. Standard model tactics include random or unfocused patrol; rapid response to 911 calls for service; generally applied investigation of reported offenses; and broadly defined, intensive enforcement and arrest policies. To make matters worse, a significant number of departments not only rely heavily on these very tactics, but they also continue to view crime analysis and GIS as supplementary to daily operations, not the driving force.

When we combine these critiques of law enforcement with current demands on the profession, it only makes sense that a discipline such as crime analysis should play such a transformative role moving forward. Virtually every other industry is expected to use data, science, or some other form of evidence as guiding principles. After all, we rightfully assume that the doctors we visit for health care, the financial advisers we trust to invest our hard-earned money, or the manufacturers that produced the SUV we drive are using the latest data and knowledge to inform their services and products. Even professional sports teams use data and analytics more

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thoroughly and consistently than law enforcement. Modern policing must evolve in much the same way if it wants to achieve peak performance in providing public safety.

The good news is that GIS is an agile, insightful way to implement modern crime control strategies, better engage communities, and make the most of limited resources.

Put plainly, you need crime analysis and GIS for the following reasons:

- The public demands it.
- It underpins all policing strategies.
- It works, making police more effective and communities safer.

The public demands it

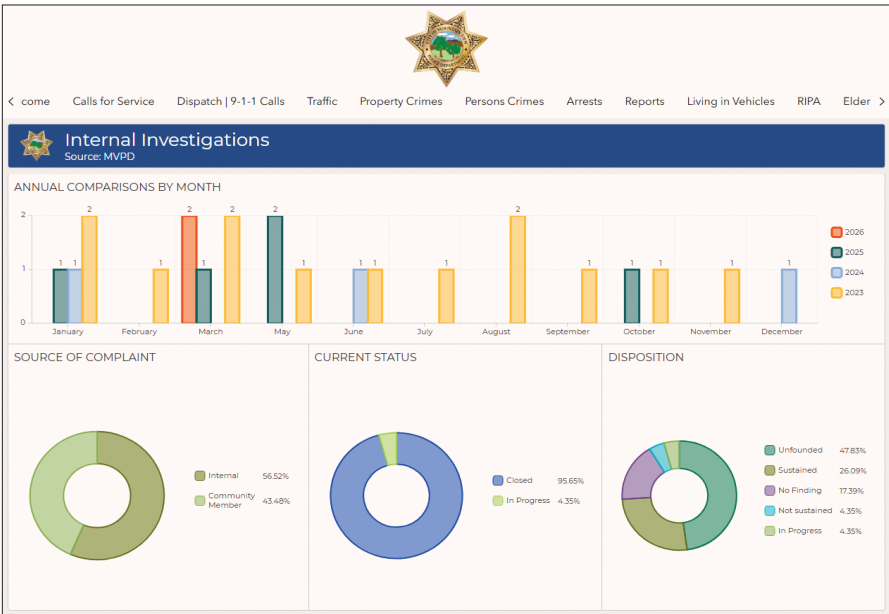


Figure 1.1. Mountain View (California) Police Department's public-facing dashboard displaying internal investigations data. Mountain View Police Department.

Policing has arrived at a precipice in the last few years, facing socially driven demands for reform and improvement. In some communities, inequitable policing practices have degraded the public's trust and challenged the legitimacy of law enforcement agencies. Although they may not ask for it by name, the public, whether local government, activist groups, or

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perhaps society at large, is clamoring for more data-driven, effective use of policing resources, as well as transparent or even more open access to what steers a police department’s operations, often through data or other related means.

In response, many agencies are seeking new ways to improve their relationships with the communities they serve, including methods to demonstrate transparency and accountable policies and procedures. One way we can and should evolve to meet such expectations is to have operations, daily and strategic, be informed by thorough GIS. It falls on the shoulders of commanders to ensure that this practice takes place.

Because these actions are data-driven, they are frequently transparent and more easily shared outside a department’s walls when appropriate. GIS not only provides an effective mechanism for resource deployment and problem-solving but also meets other public expectations (figure 1.1). It is important to engage the community more deeply and use its feedback intently to drive public safety priorities, inform policies and procedures, and guide field operations. A more detailed discussion of sharing public-facing data and analyses can be found in section 2 of this book.

It underpins all policing strategies

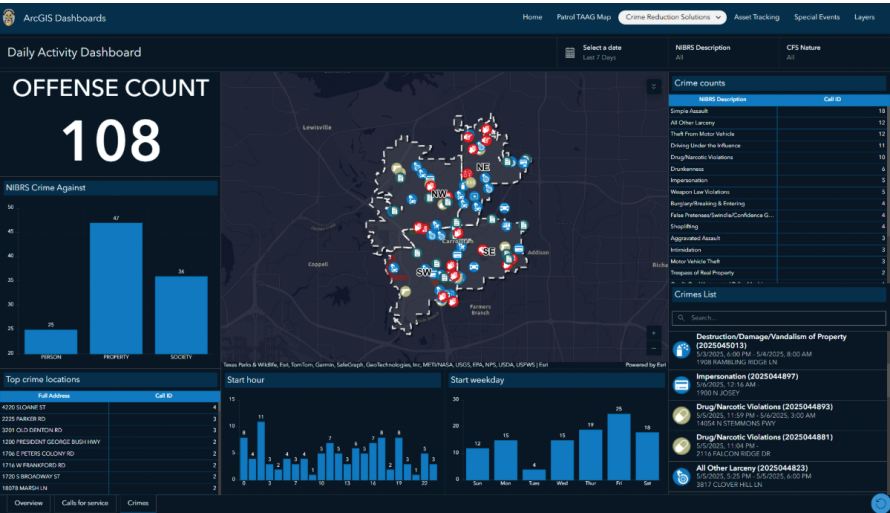


Figure 1.2. The Esri Daily Activity Dashboard containing various data points related to crime. Esri.

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One crucial aspect of crime analysis is that it is inherently necessary for effectively deploying any policing model. This is obvious when you think about it but admittedly easy to overlook, considering the daily pressures experienced in law enforcement. Police rely on GIS and analysis to drive any place-based, problem-oriented, or other evidence-based strategy. These strategies simply cannot work without due analysis of places, problems, or the larger evidence base. New hot spot maps are needed for **hot spot policing** (as well as the necessary analysis and context of what is generating the hot spots), as are updated social network analyses with the latest gang members for **intelligence-led policing**. More in-depth analyses contribute to strategies such as **risk-based policing** and **problem-oriented policing**, both of which require qualitative and quantitative techniques alongside stakeholder participation to ensure success. It stands to reason, then, that crime analysis should be as familiar to police officers, including commanders, as their duty weapon or handcuffs.

Commanders should note that GIS and analysis are simply part of the package of modern law enforcement, even if they have not realized it until now. All commanders, particularly any skeptics, should consider analysis the engine of their operations; otherwise, it is like having a head-turning sport convertible with no horsepower under the hood. It may look good on the outside, but it cannot take you anywhere. The same goes with analysis. You can meet only the most basic of demands without it, and you will certainly be incapable of meeting community (and even your agency's) expectations for crime reduction and prevention.

Another important distinction to make is the specific approach or type of strategy being used to solve a problem. Many police agencies have been making crime maps for several years, as an example, but that does not necessarily mean that proper crime analysis is driving the creation of those maps, let alone effective deployment of resources based on the maps' contents. Sending out weekly maps of reported crime with no analytic context or direction from commanders, supervisory staff, or even analysts is insufficient. Instead, you should take the time to ensure that technology, such as GIS, is used in conjunction with best practices and other strategies rooted in evidence, all of which will provide more meaningful results in the long run (figure 1.2).

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It works, making police more effective and communities safer

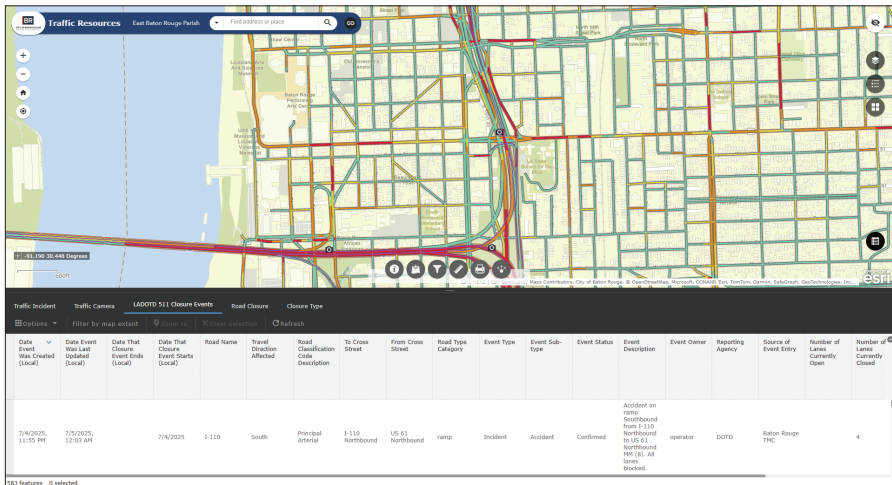


Figure 1.3. The Baton Rouge, Louisiana, Traffic Resources dashboard. City of Baton Rouge-Parish of East Baton Rouge.

Examples are too numerous to count illustrating the power of GIS and the success it can bring, whether it's identifying an emerging crime pattern and leading to its prompt disruption or successfully directing and evaluating a large-scale, evidence-based project (figure 1.3). Examples can be found in a variety of outlets, including the following:

- The International Association of Crime Analysts (IACA)
- Evidence-based policing organizations, such as the American Society of Evidence-Based Policing (ASEBP) or the United Kingdom's Society of Evidence Based Policing (SEBP), among others
- Published works in academic journals or professional publications, including *Police Chief* magazine from the International Association of Chiefs of Police (IACP)

Upcoming sections of this book also provide authentic analysis products and case studies worthy of review and duplication.

Unfortunately, as famed criminologist and policing scholar Herman Goldstein (2003, 18) observed, these powerful examples are "often the products of an intense effort by one or more especially motivated officers in an

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agency in which their work is an exception, in which other problems are not similarly addressed, and in which there is little involvement of top management.”¹ Goldstein therefore strongly encourages command staff to be acutely engaged when it comes to the combined value of analysis and problem-solving. He continues:

Such an investment [in an agency's analysis and response capacity] should continue to draw on the knowledge and experience of all police employees, but it will depend heavily, for its success, on the full engagement of the chief executive and management (2003, 19)².

Effective analysis provides an opportunity for law enforcement to make the biggest impact in terms of overall public safety through rapid proactive response to crimes that have occurred and, ideally, prevention of additional crimes. When considering what Ratcliffe (2017) calls the crime funnel (figure 1.4), we see that for every 1,000 offenses encountered by the public, a staggeringly low total of four offenders end up incarcerated for the crimes committed. What this means is that law enforcement cannot expect to make meaningful strides in public safety or crime reduction if the same number of crimes (or more) plagues our cities.

However, using GIS in precise, strategic ways can allow police departments and their partners to readily identify patterns, prescribe preventive measures with partnering stakeholders, and swiftly identify and apprehend offenders to hold them accountable for their actions. By focusing efforts on the top of the crime funnel and ideally preventing more crimes from “entering” in the first place, we can and will see tangible progress.