Reducing the Cost of Quality Policing:
Making Community Safety Cost Effective And Sustainable

The Cordero Group

- A thoughtful discussion of economic-driven challenges and opportunities facing local law enforcement in a new era of austerity

- A provocative series of proven methods for improving productivity and lowering the cost of policing

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POLICING IN DIFFICULT ECONOMIC TIMES
Joseph Cordero, The Cordero Group

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Introduction

American cities and towns are still struggling with the residual effects of a challenging global economy, including shrinking revenues, cuts in state and federal aid, and escalating costs. In New Jersey, there is also a newly enacted 2% property tax increase cap. The results are clearly seen in the scope and depth of unavoidable, across-the-board reductions in municipal staffing and service levels. Unlike in years past when there have been similar issues, police departments this time around have not escaped the wrath of the economic downturn. Many local police departments have experienced multiple-yearly budget and staffing cuts, and unfortunately, even more significant and painful contractions may still be necessary. This problem is not just a New Jersey or a big city issue. While we have heard of widely publicized police cuts in large police agencies and cities where many have believed public safety cuts were unlikely, the reality is that many mid-sized and small agencies have sustained similar cuts. What's more, many other municipalities are struggling to identify ways of controlling the increasing cost of policing to avoid perilous future cuts to their own departments.

The future of local policing and community safety depends, in large part, on how effectively municipalities handle this new reality and whether they can achieve the necessary savings without eroding public safety to unacceptable levels. Compensating for the effect of dwindling resources and keeping communities safe at an affordable cost now requires a sharper focus on optimizing productivity and using limited resources with greater precision and focus.

These are compelling reasons and mutually persuasive incentives for exploring new solutions that significantly improve police productivity and the quality of service. Unmistakably, this approach may be the lesser of all the possible short-term "evils" for stakeholders and only a starting point; however, the approach will help determine whether local governments can maintain the record of successful policing as we know it today or be compelled to enact radical changes in the nature and texture of public safety services that will affect entire communities.

This paper offers pragmatic insights on sensible and proven cost-effective steps that may reduce spending and keep communities safe during tight budget time periods. These insights include new perspectives on rightsizing police departments, police budgeting, and increasing productivity and reducing costs through use of technology. It presents a case review to show how, despite challenging fiscal pressures, one city's bold decision to allocate the necessary mix of resources to maximize police productivity and minimize costs has yielded an enormous return on investment totaling tens of millions of dollars in productivity gains and historic improvements in public safety as well. It concludes by encouraging municipal leaders to explore this and other proven models for managing and preserving the future safety of their towns and cities in light of the current potential for unavoidable budget cuts to public safety.

The Way Forward

Avoiding Pitfalls

Promising that public safety budget cuts will not impact community safety is one thing; delivering on the promise is quite another. Clearly, the importance of doing more with less is more evident now than in recent memory, but achieving forecasted expectations will require a well conceived plan; it is unlikely to happen by the simple act of slicing a budget. Experience has shown the least viable, yet most common, approach is to make across- the-board cuts and expect police agencies to handle growing demand and public expectations using the same methods as before and without appropriate, needed support systems. This approach often leads police departments to enact strategies only intended to increase police presence by temporarily shifting personnel to "front line" duties, as a way of calming the fears of weary residents. A like practice is allocating additional temporary overtime funding to bridge staffing gaps. The problem with these approaches is that they provide very limited short-term benefits and prove to be both economically and organizationally unsustainable. As evidenced in many cities and towns throughout the state and the nation, these methods often fail to meet public expectations. Additionally, although overall crime levels have continued a downward path nationally, struggling communities across the nation have been showered by media reports about how public safety cuts have led to increased criminal activity, deteriorating the quality-of-life or delaying police responses to emergency calls for assistance.

Leadership and Collaboration – The Key to Success

Maintaining public safety with fewer resources or providing additional value to communities that have sacrificed other service areas to preserve police funding levels requires a new more unique approach that maximizes the use and benefit of available resources. This new direction necessitates closer collaboration between the police and municipal leaders; neither can do it alone.   Many police chiefs are talented and experienced professionals. Working together as a municipal team presents the best opportunity to leverage their individual experiences in advancing the changes needed to attain desired outcomes. Chiefs may require assistance and the right tools to get that job done. Police chiefs are busy running the day-to-day operations of their departments. They may have the necessary skills, but not the time nor the support systems to craft and implement a viable plan for making the level of changes the current challenges require.

Effective leadership requires planning. Managing police budget cuts require a strategic plan of action to minimize public harm and the potential for even more devastating cuts. Doing one without the other may address the immediate exigency of saving municipal dollars, but then is incompatible with the goal of avoiding significant erosions of public safety, a change that may drive away tax-paying residents and businesses and threaten the long-term fiscal health of a municipality.   However, strategy is merely a vision. Moving the present into the

future also requires implementation of sound theory into actual practice. For municipal leaders, the budget becomes their most powerful instrument to deliver needed change.

There are a number of major strategies that local government leaders and police managers can choose to manage the consequences of budget cuts. These include, but are not limited to:

- Managing agency workload – prioritizing, reducing, and modifying service delivery
- Realigning agency objectives
- Partnering with other agencies, non-profits, and communities
- Reorganizing and rightsizing agencies
- Switching from reactive to proactive policing methods
- Adopting preventative oriented and problem solving service models
- Bolstering productivity
- Increasing efficiency
- Implementing force multipliers
- Sharing services
- Consolidating / merging local police agencies
- Regionalizing police agencies
- Outsourcing services

Within these wide ranging strategies, an extensive assortment of tactics is available, depending on the particulars of each situation and locality. It is also often necessary to select and implement a number of complementary strategies and support tactics rather than just a singular approach.

Municipal Budgeting – Harnessing Change in a Positive Way

However, whatever the combination of approaches that is selected, a police budget should complement and facilitate their achievement, rather than perpetuate the status quo or even worse -- inhibit desired outcomes. Policing innovation requires an innovative budget process that funds the right mix of resources and aligns funding with the goals and objectives of the agency. Ironically, local police budgets rarely meet this important criterion.

Local budging practices do not always tie expenses to direct outcomes. Police will budget line items, such as salaries and wages, equipment, maintenance, etc., and view them as a means of achieving program instead of agency goals. This approach regularly leads to incremental thinking, more along the lines of how funds will be spent and less on what can be accomplished.[1] Consequently, when faced with cuts, support line items - the very funding stream that enables municipalities to achieve the dual goals of keeping their communities safe and keep costs down – frequently disappear first. A more pragmatic

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[1] Tyer, Charlie. *Journal of Public Budgeting, Accounting and Financial Management* in Vol. 9, no. 2 (Summer 1997).

approach might be a series of uniform reductions that carefully strike a balance between the types of resources that lean police agencies truly need to work not only effectively, but more importantly productively within these new constraints.

The surest way to drive productivity and efficiency in policing is through a creative and efficient budget process. In other words, municipalities should expect the advancement of affordable and effective policing to the extent that the budget funds the acquisition or preservation of the right tools and methods needed to maintain or hopefully increase effectiveness, productivity, and efficiency.

This process of course is easier said than done. Rightsizing a police department is not just about headcount. Whether an agency has more, fewer, or just the right amount of staffing, its needs don't necessarily guarantee different results. However, when agencies are able to deploy resources to the right places, at the right times, to do the right things, the results are quite different.

Acquiring or protecting the right mix of skills, the right methods and systems may not be the most politically easy thing to do, while cities and towns are reducing staff and making other cuts, but it is often the right thing to do. Even when federal or state grants are not available, if municipalities can realize a sizeable return on investment on capital and improve outcomes, then doing so makes both practical and economic sense.

A Case For Productivity

This paper extensively point out that increasing police productivity and optimizing resources can bridge the gap between lower staffing levels and community safety and also provide the services residents want without increasing costs. The range of cost savings and additional service capacity that municipalities can realize using these methods is best illustrated by examining the responses to previous downturns and other adversities. Doing so can provide useful lessons for how to deal well with today's challenges. The case of East Orange, New Jersey, is a good example. While the "new" economy may be the catalyst for many of today's necessary changes in policing, the East Orange Police Department (EOPD) began to tackle its dual problems of high crime and dwindling resources over seven years ago with a great level of success.

Background

In 2003, the City of East Orange was plagued by the highest overall crime rate and also the second highest violent crime rate in New Jersey. The City's violent crime problem was mainly a by-product of drug-related activity. The police department was staffed by 287 sworn police officers and 45 non- sworn personnel. It policed a city of about 70,000 residents, all of whom lived within a radius of four square miles. The department employed a traditional reactive policing model accentuated by rapid response to all 9-1-1 calls (though police response times then were less than rapid), random patrols, and post- crime investigations.

In addition to its patrol force, the police department fielded narcotics enforcement, anti-street-crime, and criminal investigative units. Although there was a strong nexus between illegal narcotics activity and violent crime, these units operated in silos, meaning they weren't acting cohesively.

The drug enforcement unit focused almost exclusively on drug arrests and narcotics seizures, irrespective of whether investigative targets were actually associated with drug-related violence. Anti-crime units spent their time trying to catch a handful of the same drug dealing suspects in the act of committing crime.

Patrol units focused on reactive responses. Many times they would deal with conditions created by the same individuals engaged in drug trafficking and related violent crime. Detectives became engaged once these situations bubbled over into the expected: serious criminal acts. The non-violent crime problem was essentially dealt with in the same manner. Aside from having little impact on crime levels, these reactive approaches led to higher workloads, as seemingly unaffected criminal groups multiplied and residents, frustrated by the lack of effective police action, increasingly dialed 9-1-1 for assistance.

The department also suffered from a serious public credibility problem; many community residents had lost confidence in the police department's ability to keep them safe.

Upon assuming the newly created post of Police Director in 2004, the City's Mayor conveyed his major priorities as: 1) significantly reducing crime; 2) lowering the community's fear of crime; and 3) improving the city's image as a safe place to live and do business. All these priorities were to be met within a tight budget.

Given these challenges, we designed an innovative and cost-effective public safety blueprint that called for realignment of agency resources and refocusing of operations toward preventing rather than merely reacting to crime and other public safety concerns. It meant abandoning random patrols in favor of more focused problem-solving directed patrols. A directed patrol is an uninterrupted period of time in which officers are assigned to proactively prevent crime and handle public safety matters of importance to community residents. A key aspect of directed patrols is they allow agencies to prioritize and direct scarce resources to accomplish those specific goals that matter the most to residents. Another chief element is that directed patrols are definable and measurable. Knowing what works efficiently presupposes that agencies also measure what is being done to address problems and how frequently and well they do it.

When presented with the plan, the Department's senior staff pointed out that the City would have to double the size of its police force to handle the existing workload and implement the new policing plan. Their apprehensions were based on the fact that the agency had lost 17 officers during the past year. Police officers were now busy running from one serious call for assistance to another, and the agency lacked the necessary resources to meet the current demands, let alone handle a whole new plan.

While these projections were genuine beliefs and concerns, they lacked a sufficient evidentiary basis since the department had not evaluated its operational capacity or performance level in decades, and did not have the means to so efficiently.

There was little doubt that the agency was busy. However, there are important distinctions between working hard and being productive and merely servicing problems rather than preventing them.

By only considering how busy the agency was and not whether its efforts were properly aligned with objectives to produce the right outcomes, the resulting measures would have had no meaningful value. Even worse, the cultural mindset had long served as a basis for the belief that the only method of doing more or achieving objectives was gaining additional input in the form of more staffing or overtime.

That year, we began the process of manually collecting, examining, and benchmarking police workload levels and agency performance metrics. In the process, we identified base-level capacity ranges and opportunities for improving productivity and efficiency. The Department adopted performance objectives and standards and a range of data-driven proactive policing practices and also instituted accountability measures.

From Concept to Success

Within just a few months, the results showed the Department was heading in the right direction. During the last quarter of 2004, the agency squeezed out about 6,000 problem-solving directed patrols in addition to handling its regular workload. In 2005, the agency's staffing level dropped once again by another 12 officers. This unanticipated development led to a reorganization of the Department and the adoption of a new call-for-service management strategy. The intent was to make the agency more agile and fully leverage and align its resources with the goals of the Department and priorities of the community. Despite having lost 11% of its workforce, the Department still conducted well over 40,000 directed patrols at crime hotspots, accounting for more than 12,000 work hours, essentially making up about 58% of that year's attrition. The other positive outcome of these new efforts was a nearly 37% decline in overall crime between 2003 and 2005.

While crime was dropping and productivity increasing, there was still a sense among us, including members of our earlier reluctant senior staff, that the Department could and needed to do a lot better, but needed the right tools to get the job done.

These cost-effective achievements and the promising prospects for additional productivity increases and cost savings led the City to invest in technologies specifically aimed at facilitating and optimizing our strategies and extending the Department's protective umbrella for our residents. The financial commitment led to the Department's acquisition of common technology systems that many other departments already had, such as a functional computer-aided dispatch and records management system (CAD/RMS). The CAD/RMS incorporated an in-car, wireless reporting module that comprised the first leg of our productivity-enhancing technology blueprint. In-car reporting allowed officers to remain in

their cars and file reports from the field instead of traveling to police headquarters, which would not only thin police presence in the City, but also waste time.

Although now equipped with a new CAD/RMS system, the process of getting internal and external information to the right management personnel when it was needed remained cumbersome and time consuming. The Department needed to focus on the business of fighting crime and maintaining community safety instead of simply generating and fusing data that changed minute by minute.

After reviewing many commercial, off-the-shelf solutions, none met our needs. While many did pack an assortment of bells and whistles, their primary focus was on record keeping, reporting, and administrative tasks. The problem then, not unlike today, was that the police technology had not caught up with the more progressive policing methods. In 2005, we developed and deployed a paperless law enforcement electronic dashboard (LEED) designed to help optimize agency operations and resources. Borrowing a page from Fortune 500 companies' just-in-time methods, LEED was specifically designed to provide the right information to manage problems and agency resources in real time and without cumbersome queries. In fact, to attain the same level of actionable information provided by LEED from a typical CAD/RMS system would require about 64,000 manual queries every 24 hours and about 100 or so analysts to digest the information.

The "dashboard" allowed the Department to get a "jump start" on developing matters of police interest. Rather than committing an increasing number of resources to deal with the after-affects of crime, we used just-in-time information to optimize deployment strategies and empower officers to defuse problems quickly and reduce crime before crime could occur. LEED also provided supervisors with minute-by-minute information on the agency's resource utilization rate and its ability to constantly and easily optimize performance by utilizing and directing idle resources toward the achievement of tactical objectives.

Outcome #1 – Productivity and Economic Gains

Armed with this new tool and up-to-the minute situational awareness and information about workload levels, resource utilization, performance measures, and other metrics, our productivity exploded. As shown in figure 1 (see Appendix, figure 1) in 2006, crime prevention- directed patrol activity rose to over 186,000, and by 2008, it surpassed 500,000 directed patrols. Between 2005 and 2008, the agency performed nearly 1.2 million crime-prevention directed patrols.

"The City received the equivalent of nearly one full year of policing services free of charge."

Over the years, we improved the "dashboard" with new capabilities, integrated it with other systems, added a unique resource visualization and management system that allowed for total factor synchronization, and fine-tuned our data-driven management methods for even more profound results. Between 2009 and 2010 alone, the Department completed over 1 million directed patrols.

As shown in figure 2 (see Appendix, figure 2) between 2005 and 2008 the Department achieved productivity increases of nearly 300,000 work hours. By 2010, the department's productivity had grown to over 500,000 additional work hours. Ordinarily, such additional work time would have necessitated overtime compensation, rendering it cost prohibitive, particularly in a time of economic downturn.

Ironically, what the police department senior staff had said in 2004 was right. Had we not made these changes and used technology in a unique way, the City would have needed about 252 additional officers to realize the current level of productivity. Another way to look at the significance of this achievement is the City delivered the equivalent of nearly one full year of policing services to the community free of charge.

From an economic perspective, the results of this process were just as astonishing. Figure 2 shows the dollar value, in terms of salary and wages of data driven productivity increases and reclaimed productivity. Between 2005 and 2008, the dollar value was about $13 million. Between 2009 and 2010, the department reaped another $10 million in productivity-related savings. That is more than $5 million in increased productivity per annum in an agency with just a $25 million annual budget.

Outcome #2 – Results of Value

Increased outputs as productivity accomplished one of the two main agency goals. The second goal was to get desirable outcomes in improved public safety. In this case, that also did happen and for 7 straight years.

Technology-enabled, productivity enhancing methods helped East Orange achieve historic crime reductions, lower crime-related economic losses by tens of millions of dollars, and reduce fear-of-crime in the community. During the first three years alone, overall crime declined by 56%. By 2008, it had dropped 71% from 7249 crimes to just over 2100 crimes. As of 2009, overall crime had declined by 76%, down to just over 1750 crimes annually. More importantly, over 96% of those in households in neighborhoods formerly known for having the highest violent crime rates in the City and State now reported feeling safe walking in their neighborhoods at night.

Replicating This Success in Other Towns and Cities

An Operational Road Map

How can other agencies reap similar cost savings and improve their own outcomes?

First, must be the recognition that change is needed. Beyond that, municipalities and their police departments must be committed to making the cultural, process, and technology changes that are necessary to increase police productivity and deliver sustainable high-quality services.

A good starting point is to align all agency resources to key agency goals. Another is conducting a thorough and accurate assessment of current agency capacity, resource utilization, and performance levels. If there is an excess, idle or unaligned capacity, the objective then must be maximize their use and leverage those resources to fill service gaps and achieve agency goals. If, on the other hand, agencies find that even after they optimize their use of agency resources, capacity is far below the workload necessary to achieve desired targets, they should adopt workload management strategies by considering use of force multipliers systems and other methods.   In either case, the managing of agency resources should be an ongoing, frequent, and well evaluated task. However, that process is often not as simple as it sounds. Knowing what is going on, when it is going on, and having the necessary background information to make timely and informed decisions about which is going on can help optimize resources, but it is not a capability most departments have. Having that capability requires access to the right tools and methods.

Agencies must also reevaluate a significant number of typical contemporary law enforcement methods and strategies that have worked well during times of economic growth, but which may be cost prohibitive and unsustainable in today's lesser economy.

They should consider adopting data-driven policing methods, principles of accountability; and for agencies that still rely on traditional reactive policing methods, a basic change in policing philosophy.

The scope of agency changes and technology needs will vary according to the scale of the public safety risks, department size, capability, policing orientation, and department goals and objectives for the community. However, most agencies that do seek to improve productivity, achieve cost savings, and improve outcomes can clearly benefit from real-time situational awareness, resource alignment and optimization, and force multiplier methods and systems.

To help contain the cost of policing in the long-term without considerable changes in how the police operate and which services they need to deliver, elected officials and law enforcement professionals should create a strategic plan for managing ongoing demand, reducing costs, and re-engineering the police business process to make agencies more nimble and resourceful.

In addition to these planned operational changes, technology can play a critically important role in achieving success. Any resulting cost savings and positive outcomes would not be fully possible without these enabling tools.

The Technology Roadmap -Shifting the Priorities

Over many years, law enforcement has invested in a variety of technologies to improve outcomes and increase efficiency, but with widely varying and even sketchy results.
For example, technology has improved process efficiency in many agencies, but not either crime control effectiveness or agency capacity in many others.

Some reasons for this limited benefit include a major focus by police departments on technology solutions that enhance specific reactive law enforcement operations, such as investigations, routine patrol activities, and administrative tasks and not as much focus on the lesser understood proactive crime prevention activities and police productivity. Another factor is that implementation and the adoption of technology has been somewhat limited in scope and reach. Many times, implementation strategies are narrowly compartmentalized, which inhibits agency-wide diffusion of benefits. Lastly, for technology to work effectively, it should be clearly incorporated into the everyday operations of an agency. These current harsh economic times may present a unique opportunity for reexamining and reprioritizing how police departments allocate investments in and use technology. With today's compelling changes in the economics of policing, the need for police tools that help achieve both results and value are the new and undeniable priorities.

Optimizing Outcomes Using Technology-Enabled Methods Does Works

This prerequisite leads into the next discussion point of our case study: What are some of the technology systems that are needed to replicate this higher level of success?

Before an agency can decide on specific technologies that fit their needs and budget, that agency has to determine realistically what those needs and objectives are.

For example, if local strategies entail devising a meaningful basis for guiding field operations and making the best use of scarce resources, the most critical technology need may be systems, such as the law enforcement electronic dashboard, to transform gathered information into tactical or operational intelligence in real or near-real time.

Other agencies may believe their most critical need is linking strategy to operational realities. In such cases, technology needs are more in line with systems that can execute strategies in meaningful ways, so agencies can shape outcomes and reduce costs by getting it right the first time. An example would be electronic visualization tools. The East Orange Police acquired a vehicle locator system (AVL) in 2005. The original aim was to use GPS technology to reduce police response times to emergency calls. The department needed an electronic visualization system to facilitate the management and synchronization of all physical and virtual resources. Working with the Department's AVL partner, the existing AVL system was transformed into a powerful, one-stop visualization platform.

TAC-AVL displays active calls for service, criminal incidents by type over defined time periods, hotspots, and features embedded visualization of surveillance camera views and ranges, gunshot detection sensors, and the location of all patrol units.

In these economically challenging times, agencies may need to extend the reach of their limited resources exponentially. For them, carefully chosen force multiplier technologies that extend an agency's reach may be the priority.
These include such systems as CCTV cameras, Light-Based Intervention Systems (LBIS), among others. The LBIS, for example, is a powerful light source that transforms CCTV cameras into highly visible and interactive crime prevention tools. LBIS synchronizes with CCTV Camera views and has two modes of operations – incident intervention and crime prevention.

In the incident intervention mode, CCTV camera operators use a "point and click" absolute positioning system to activate LBIS upon observing an incident requiring immediate police intervention. Instantly, a bright illumination source "paints" the suspect or target and conveys a powerful persuasive message: "Police are observing, Police are recording, and Police Are Responding."

The system saves resources and acts as a force multiplier because of its swift intervention properties and its ability to prevent an unfolding crime even before the arrival of the police. Likewise, it enables agencies to disrupt not only serious crime, but also public nuisances and quality of life issues even when the police lack the physical resources to do so. Leaving these matters unattended because of resource constraints only invites more serious crime and public concern.

In the crime prevention mode, LBIS alerts the public and would-be criminals that areas are under CCTV camera surveillance by projecting illuminated letters onto the street (e.g., "Police"). This method of use is especially useful in protecting school perimeters, business corridors, tourist areas, transportation hubs, and sensitive areas.

Police departments can also use technology-enabled tactics in support of broader strategies. By way of illustration consider the organizational objectives that ultimately led to the development of the Automated Emergency Dispatch System (AED). Resource constraints notwithstanding, residents expect the police to respond quickly to life threatening emergencies. Failure to successfully meet this critical need and expectation is a sure way to lose public confidence in the police and local government. Secondly, many police agencies are operating with fewer resources than in the past. As such, it is often necessary to shift resources away from some less problematic neighborhoods and into areas of need. Although force multipliers such as CCTV cameras may help fill the void in lesser patrolled areas, when emergencies arise, residents living in all areas of a City expect a quick police response. What the police needed to accomplish this objective was a method for significantly expediting emergency responses without increasing the size of the police force. AED met the objective by automating the emergency police dispatch protocol and electronically locating and dispatching the nearest available police cars. AED reduced police dispatch time to just over one second and slashed overall response times by over 50 percent.

The point is that agencies should develop strategies and objectives first and then define their technology needs to achieve them, not adopt their needs to fit the technology.

Unless agencies know what they need technology to do for them, they are unlikely to get what it does fully. Historically, that issue has led policing agencies to go down the wrong path.

Cost Effective Techniques for Transcending Today's Barriers

There are a number of other factors that police departments should consider in selecting the systems that best-fit their needs, including but not limited to cost and return on investment.

Cost

The cost of technology is a major concern for most municipalities, given today's economic environment. However, cost factors should be considered in conjunction with the anticipated return on that investment. The EOPD did achieve increasing benefits at minimum cost by considering a number of important factors, including:

- Broad Diffusion of Benefits

Use the same technology components to service an organization's strategic, operational, and tactical informational needs. For example, the law enforcement dashboard can provide

patrol commanders with relevant tactical information in real time. It can also facilitate strategic crime analysis, provide police executives with timely operational information, and helps administrators with planning and budgeting management duties.

- ### Re-Use Existing Systems

Incorporate existing technology systems with modified off-the-shelf components and less expensive new technology rather than spending large sums on entire systems to replicate part of what other existing systems already delivers. An example is the metamorphic transformation of AVL into TAC-AVL.

- ### Multi-Tasking

Single purpose systems are relevant and often necessary, but in today's economy, they are difficult to justify. Finding ways to get the most out of technology investments is a key factor in deriving high return on that investment and achieving useful cost savings.

For instance, in 2005, the EOPD deployed its first series of CCTV cameras around the City as a force multiplier with a great deal of success. Since then, many other municipalities have deployed CCTV cameras with quite different results.

Part of the reason for different outcomes is other municipalities deploy the system, not as a force multiplier or proactive crime prevention tool, but rather as a reactive, post -crime forensic instrument. Others opted for random monitoring strategies that were shown to produce only limited value.

"Strategy matters. Technology can't do it alone." Since the goals of the EOPD were to prevent crime, increase productivity without increasing cost, and optimize the use of its resources, the Department adopted an information-led, directed virtual patrol (DVP) program, which is similar to the directed patrol concept. Directed virtual patrols are conducted in a focused manner consistent with ongoing and developing matters of police interest.

Because CCTV cameras are integrated with the TAC-AVL system, supervisors can see which areas are being actively monitored by virtual patrollers and easily direct physical resources to other problem areas, thereby achieving a true force multiplication factor. Additionally, the Department developed an in-car virtual patrol program. Officers on directed patrol assignments at crime or quality-of-life hotspots can simultaneously monitor adjacent areas virtually from within their patrol vehicles, thus multiplying the use of cameras and maximizing their benefit. This method is also used for converting administrative down-time into proactive crime prevention up-time.

Finally, public safety, public satisfaction, and productivity can be increased by involving the community in the process. One such program is the Virtual Community Patrol (VCP). VCP is a unique approach that integrates web-based technology with video surveillance cameras

to allow community residents anonymously to draw police attention to suspected criminal activity and quality-of-life issues instantly. VCP reporters use a combination of text messaging and "point and click" localization method to alert the police of an incident and orient the corresponding camera(s). VCP reporters use maps or photographic still images of their community as a reference point for identifying the event location (community residents do not have access to live camera feed). "Pointing and clicking" on the location of the event, prompts police personnel to move the corresponding CCTV camera to the incident location. This interactive collaboration between residents and the police exponentially increases community guardianship, force effectiveness, and also reduces the fear of crime. Aside from empowering citizens to help the police keep their communities safe, the system is a powerful crime prevention tool. Would-be criminals quickly become aware and weary of committing crimes in areas where community residents can instantly place the virtual eyes of the police on them with just a click of a mouse.

The point is that strategy does matter in today's economy. How we use technology determines what it will deliver and how well and how cost effective. While most CCTV cameras and like technologies are similar, product differentiation lies in the vendor's ability to deliver adaptive customization that enables multiple uses and benefits.

Return on Capital Investment

By 2010, the City had reaped over $23 million in additional productivity gains or an 1816% return on their original investment.

Over a nearly six-year period, the City of East Orange invested roughly $1.2 million in police technology in form of grants, forfeiture funds, and local financing, inclusive of a CAD/RMS. In the first year, the city more than doubled its return on that investment as productivity increases.

By 2010, aside from achieving historic improvements in public safety and saving residents tens of millions of dollars in crime-related losses, the City had reaped over $23 million in additional productivity gains or an 1816% return on the original invested capital; put another way, the annualized return on their investment was about 315.9%.
In addition, the City's innovative approach yielded several grants, which also helped pay for system upgrades as needed.

In reality, the City's return on its investment was even higher. For example, between 2007 and 2010, the EOPD conducted between 40,000 and 50,000 virtual- directed patrols annually. Using virtual- directed patrols in lieu of physical patrols to provide an additional level of guardianship saved the City between $600,000 to $850,000 annually in salary and wages. The system paid for itself in only two years.

As previously stated, additional outputs only matter if they produce the right results. In terms of outcomes, less than 3% of all the street crime occurred in CCTV coverage areas in 2010.

Concluding Thoughts

The delicate balancing of reducing costs while also preserving and strengthening core municipal services requires an innovative spirit at the very least. One goal is obviously to save money, but another important objective is to modernize the delivery of police services to meet public expectations. In the short-term, municipalities can adopt strategies for minimizing the potentially negative impact that cuts may cause to local community safety and public confidence in local government and at the same time, set the stage for positive long-term reform. Simply reducing spending by slashing police budgets only is a sure way to accrue unintended consequences. Increasing police productivity, however, is one of the most effective and easily attained methods for keeping communities safe.

Even in this current environment of disciplined spending and budgetary challenges, acquiring or preserving the right mix of productivity enhancing and force multiplying tools and methods should not be considered an expense that cities and towns believe they cannot afford or considered as choices that are only "nice" to have. Instead, they may be better viewed as necessary investments in sustainable and affordable improvements in public safety that will pay for themselves quickly and many times over no matter where the economy heads in the future.
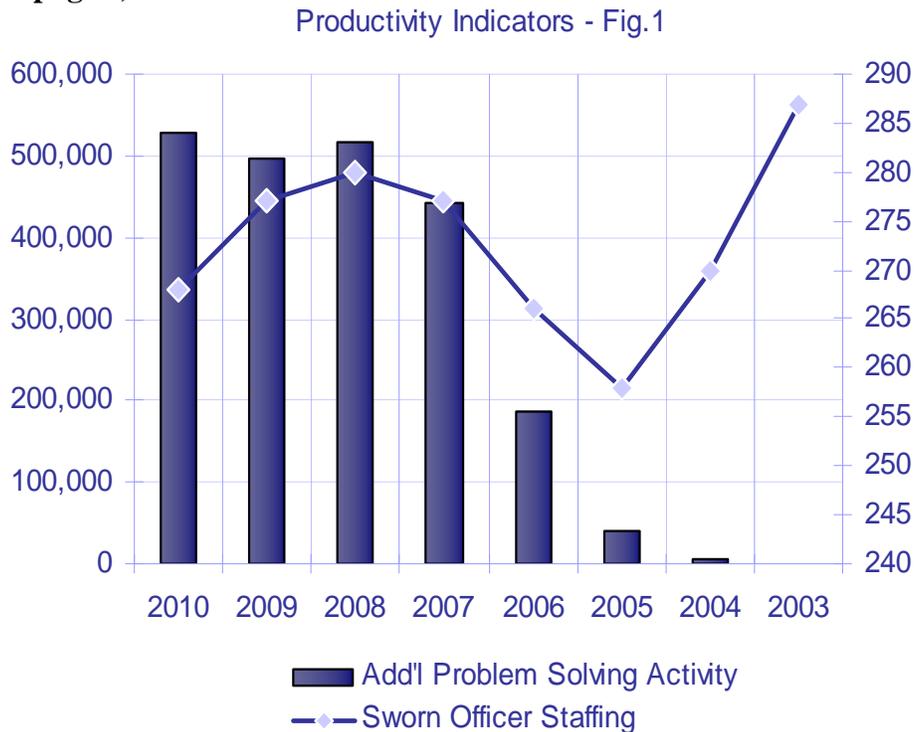
Appendix—Charts
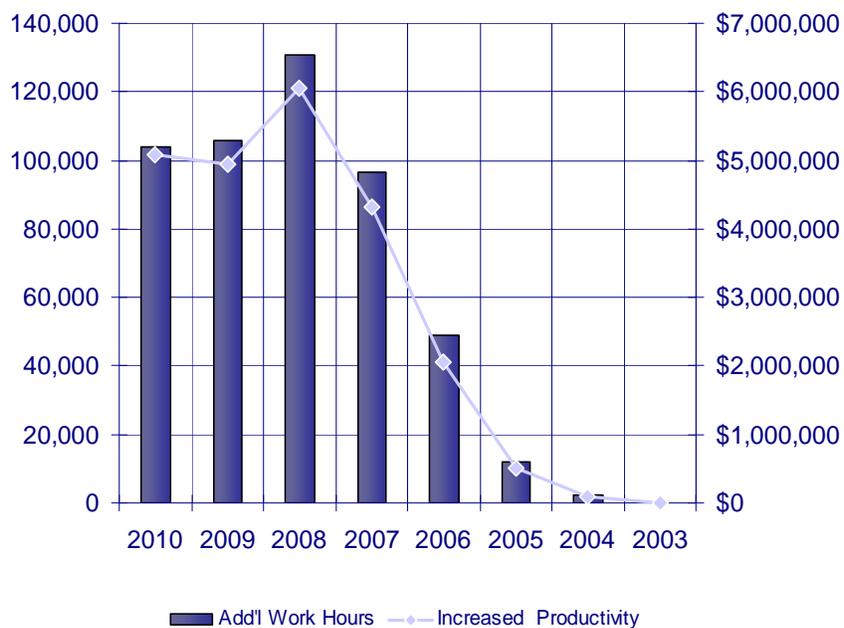**Figure 1 (see page 7)**

Productivity Indicators - Fig.1

Legend: Add'l Problem Solving Activity; Sworn Officer Staffing

Figure 2 (see page 7)

Police Productivity Indicators - Fig. 2

Legend: Add'l Work Hours; Increased Productivity

Figure 3

Serious Crime 2003-2008 - Fig 3.

	Overall Crime	Violent Crime	Non-Violent Crime
☐ U.S.	-6%	0%	-6%
◪ Northeast	-6%	-7%	-6%
◪ New Jersey	-10%	-10%	-10%
◪ NJ Urban Cities	-19%	-14%	-20%
◪ Essex County	-26%	-12%	-28%
■ East Orange	-71%	-70%	-71%