

Needs Assessment on Information Sharing Among West Valley Police Agencies

Technical Report

Needs Assessment on Information Sharing Among West Valley Police Agencies

Prepared for
Glendale Police Department and
WISE Information Sharing Committee

Prepared by

Center for Violence Prevention and Community Safety
Charles M. Katz
Steven Ballance
David Choate

Justice & Security Strategies, Inc.
Craig D. Uchida
Shellie Solomon

March 2006



About the Center for Violence Prevention and Community Safety

Arizona State University, in order to become more committed to the Arizona community and to society as a whole, is setting a new standard for research universities through the model of the New American University. As a New American University, ASU is measured not by who we exclude, but by who we include; we pursue research that considers the public good; and we assume major responsibility for the economic, social, and cultural vitality of our community. Social embeddedness is core to the development of ASU as the New American University. Social embeddedness is a university-wide, interactive, and mutually-supportive partnership with the communities of Arizona.

Toward the goal of social embeddedness, Arizona State University established the Center for Violence Prevention and Community Safety in July 2005 to respond to the growing need of Arizona's communities to improve the public's safety and well being. The Center for Violence Prevention and Community Safety is a research unit within the College of Human Services at Arizona State University. The Center's mission is to generate, share, and apply quality research and knowledge to create "best practice" standards. The center specifically evaluates policies and programs, analyzes and evaluates patterns and causes of violence, develops strategies and programs, develops a clearinghouse of research reports and "best practice" models, educates, trains and provides technical assistance, and facilitates the development of and construction of databases. For more information about the Center for Violence Prevention and Community Safety please contact us using the information provided below.

Mailing Address

Center for Violence Prevention and Community Safety
Arizona State University
P.O. Box 37100
Mail Code 3250
Phoenix, Arizona, 85069-7100

Street Address

Center for Violence Prevention and Community Safety
Arizona State University
4701 West Thunderbird Road
Glendale, Arizona 85306-4908

Phone

(602) 543-6607

Web site

<http://www.west.asu.edu/cvpcs/>

Acknowledgements

The authors thank Bryan Hill and members of the WISE information sharing committee for all of their hard work on this project. We also thank the chiefs, patrol officers, investigators, crime analysts, and RMS/CAD, communications, records, homeland security, and command personnel who participated in the interviews and provided much of the data used in the present study.

This project was funded by the Arizona Department of Homeland Security through the Glendale Police Department. Opinions contained herein are those of the authors and do not represent the position of the Glendale Police Department or the Arizona Department of Homeland Security.

© 2006 by the Arizona Board of Regents for and on behalf of Arizona State University and its Center for Violence Prevention and Community Safety.

Table of Contents

Acknowledgements	i
Executive Summary	iii
Introduction	1
Section I: Background	3
Section II: The Present Study	6
Table 1: Study Site Characteristics	7
Table 2: Socio-demographic Characteristics for West Valley Cities	8
Table 3: Data Collection Sources	10
Section III: Patrol Officer Findings	12
Major Findings: Patrol	16
Section IV: Investigator Findings	18
Major Findings: Investigators	22
Section V: Crime Analyst Findings	24
Major Findings: Crime Analysts	29
Section VI: Records Management and Communication Supervisors	30
Table 4: Information Infrastructures for West Valley Agencies	30
Table 5: Data and Report Entry by Department	32
Table 6: Web Sites of the West Valley Police Agencies	35
Section VII: Homeland Security Officials	37
Major Findings: Homeland Security Personnel	38
Section VIII: Command Personnel Findings	40
Major Findings: Command Personnel	44
Section IX: Web Sites	46
Section X: Conclusions	48
Section XI: Recommendations	50
References	52
Appendix A: Interview Instruments	53
Appendix B: Reviewed Web Sites – National	59
Reviewed Web Sites – Arizona	68

Executive Summary

Introduction and Background

This report assesses the needs of the West Valley Information Sharing Enterprise (WISE), a group of 10 law enforcement agencies within Maricopa County, Arizona, that is attempting to build an infrastructure for sharing information and data. These agencies share a common vision for increased efficiencies and performance through the sharing of accurate and reliable information. In November 2005, the Center for Violence Prevention and Community Safety at Arizona State University was contracted to conduct a needs assessment for implementing WISE. This report is one of several products that will be provided by the Center and that are intended to begin a dialogue for creating a strategic plan for building the required infrastructure for information sharing. This assessment serves as a guide for the WISE Committee to move forward in developing that strategic plan.

The needs assessment has four objectives that will affect West Valley police agencies:

1. Define the current technological environment.
2. Define how technology is used or consumed.
3. Identify current and future data-sharing needs.
4. Determine the obstacles that may interfere with regional information sharing.

Methods

To accomplish these objectives, we interviewed personnel from 10 participating West Valley law enforcement agencies and two comparison agencies, Phoenix and Chandler police departments, that are not part of the West Valley. The 10 West Valley agencies included Avondale, Buckeye, El Mirage, Glendale, Goodyear, Peoria, Surprise, Tolleson, Wickenburg, and Youngtown. We also examined more than 100 Web sites to obtain a picture of how data are used and presented to the public in the state of Arizona and nationally.

We interviewed 239 sworn personnel and civilians from the 12 police agencies. They represented six stakeholder groups: patrol, investigations, crime analysts, CAD/RMS managers, homeland security, and command personnel. Stakeholder interview protocols contained 10 to 16 questions. Although a predetermined list of questions was used to guide discussions, participants were afforded significant range to discuss topics and issues as they arose.

Findings

Objective 1: Define the current technological environment.

- Technological resources are severely limited in some agencies, but in others the potential for growth mirrors future population increases.
- The technological infrastructure (hardware and software) for information sharing varies across the West Valley. Wickenburg, for example, had no CAD, RMS, or MDCs in patrol cars. At the other end of the spectrum is Glendale which had CAD, RMS, MDCs, GIS, an interactive Web site, and a crime analyst.

Objective 2: Define how technology is used or consumed.

- Some West Valley agencies are or will soon be able to share information through their current systems. For example, El Mirage currently supports Youngtown through its CAD system. Four agencies, Avondale, Buckeye, Surprise, and Tolleson, are on the cusp of sharing information because they all use the Spillman system. Glendale is able to obtain information from Phoenix through PACE, and Peoria will soon be able to share information with Phoenix through COPLINK.
- Eight of the 10 West Valley agencies have recently acquired or updated their CAD/RMS systems. Many still are in the process of converting data and bringing their systems up to full operational capacity. Glendale plans to upgrade its CAD/RMS over the next 5 years.
- No police department in the West Valley has an existing system readily capable of collecting, evaluating, analyzing, and distributing information and knowledge in an efficient and user-friendly manner to all of the involved agencies.

Identified Technology Needs

- Patrol officers in El Mirage, Youngtown, and presumably Wickenburg expressed a need for MDCs in their cars, and investigators throughout the West Valley expressed a need for MDCs in their vehicles.
- Youngtown and Wickenburg sought basic technology (e.g., CAD, RMS) for their agencies.
- Half of the chiefs and commanders sought mapping capabilities for their agencies.

Objective 3: Identify current and future data-sharing needs.

- Patrol officers and investigators want direct access to data about persons, including an individual's prior contact with police, criminal history, Field Interview card data, photograph, aliases, associates, addresses, and outstanding warrants.
- Patrol officers want access to Attempt to Locate suspect and vehicle information and knowledge about ongoing investigations.
- Investigators want information derived from Field Interview cards, access to crime trend data from neighboring jurisdictions, and access to internal and interagency RMS data in the field.
- Patrol officers and investigators both seek additional information from crime analysts including mapping, crime trends, hot spots, and predictive information.
- Chiefs and commanders support their officers' requests for modus operandi (MO) information and person data.
- Crime analysts indicated that person data, MO information, and address-level data are most needed.

Objective 4: Determine the obstacles that may interfere with regional information sharing.

- Current MO data was found to be unreliable and not valid in most of the study agencies.
- At least half of the agencies do not have the capacity to engage in place-based (address-level) analysis.
- For some agencies, the cost of implementing an information-sharing system could be a deterrent to participating fully in WISE .
- Administrative and management problems with the development of a regional data-sharing initiative could cause problems with project implementation.
- Issues pertaining to data management, data security, data ownership, quality control, system maintenance, standardization of terminology, and training requirements all need to be discussed in order not to derail the sharing of information.
- Turf battles among all personnel levels could hinder data sharing.
- Some West Valley police agencies have already committed to costly information systems; they may not want to spend additional monies on yet another information system.

Recommendations

Based on this assessment, we recommend the following steps:

1. Create a governance structure to assure the success of the project. This should include representation and leadership from the West Valley Chiefs of Police. We recommend that the committee serve as a subcommittee for the Far West Valley Chiefs Association to provide oversight and guidance for the WISE effort.
2. The subcommittee from the West Valley Chiefs Association should select a project manager for the WISE initiative. It is recommended that this person be independent of West Valley police agencies so that he or she can offer independent and unbiased advice and direction. The project manager should be responsible for guiding the strategic planning process, identifying money to implement the WISE project, serving as liaison between the West Valley Chiefs of Police and the WISE subcommittee, and for implementing the project.
3. Create a team or subcommittee from within WISE to initiate a strategic planning process that will lead to the implementation of a West Valley-wide system and intelligence-led policing efforts. This team would develop a strategic plan, based upon the needs assessment, to bring to the WISE group for feedback and approval. As noted previously, the strategic plan should have as a primary focus the sharing of person-level data.
4. A written statement about the West Valley effort thus far to create an information-sharing initiative should be distributed to the public through local newspapers and television stations. This not only will foster legitimacy for the West Valley agencies and their chiefs, but it will convey information to other Maricopa County

law enforcement agencies about the growing organizational capacity and strength of the West Valley.

5. Create an external advisory board. The board should be comprised of individuals who have played a primary role in the creation of data-sharing projects within their jurisdictions. This group will be able to provide WISE with valuable experiential advice on how to proceed and how to address obstacles.

Recommended Next Steps

- Hire a project manager who is independent of West Valley police agencies.
- Develop a preliminary strategic plan for implementing the WISE project.
 - Assign individuals from the WISE committee to a subcommittee for accomplishing this task.
- Determine the timeline for the above two action steps.

Introduction

Since 9/11, building the necessary infrastructure for law enforcement information sharing has been an increasing priority. Such an infrastructure must include not only the technological means for exchanging information, but the business processes and communication associated with sharing information and working together. The challenge of sharing information across jurisdictional boundaries is a formidable one. With these challenges, however, come significant opportunities to leverage resources and to build strategies and partnerships for fighting crime and preventing terrorist activities.

The development of the Global Justice XML Data Model (GJXDM) has served as a catalyst for data integration efforts throughout the country. The standards brought forth through GJXDM have increased the opportunities for data sharing in a consistent format with partners across the criminal justice field. The rapid increase in the number of data-sharing initiatives in Arizona and across the country is notable.

Unfortunately, integration and information-sharing projects have been found to be associated with high failure rates and deemed to be high-risk ventures. Given the history of these types of projects, it is important to take advantage of lessons learned. One of the lessons learned is that the needs assessment has a critical role in the development of a strategic plan for implementing a successful information-sharing initiative. It is also important to acknowledge the need for long-term commitment from chiefs and upper-level management to such a project.

Most experts agree that the greatest population growth in Maricopa County will occur in the West Valley (MAG, 2006). This expansion will place a substantial burden upon all service agencies in that region. Without question, the information infrastructure supporting law enforcement in the West Valley will be substantially affected by the anticipated growth. Through extensive interviews with sworn and civilian personnel, an examination of their data systems, and a review of Web sites, we assessed the state of information sharing in the West Valley. The importance of a comprehensive strategy based upon a systematic needs assessment is the basis for this report.

This report assesses the needs of the West Valley Information Sharing Enterprise (WISE), a group of 10 law enforcement agencies within Maricopa County, Arizona, that is attempting to build an infrastructure to share information and data. These agencies share a common vision for increased efficiency and performance through the sharing of accurate and reliable information. Local law enforcement agencies often possess vital information that is not shared with their law enforcement partners (SEARCH, 2005). Increased information sharing provides a clear benefit to all levels of law enforcement.

The report is divided into 11 sections. First, in the Background Section, we briefly discuss information technologies and data sharing, and what it takes to succeed with projects of this nature. Then we examine components of intelligence-led policing, a national trend that incorporates information, analysis, intelligence, and tenets of problem solving and community policing. Second, we describe our study, including the setting

and our research methods. Sections III through VIII describe our findings with respect to six stakeholder groups: patrol, investigations, crime analysts, CAD/RMS managers, homeland security, and command personnel. Section IX reports on our examination of Web sites across the country. Sections X and XI provide conclusions and recommendations, respectively.

Section I: Background

During the past decade, the advancement of information technologies has been phenomenal. Significant progress has been made in areas of data storage, Internet access, and data security. More recently, progress has been made in standardizing data elements and in the willingness of agencies to share information beyond their present political comfort zones. Currently, numerous data-integration and information-sharing projects are occurring at national and local levels of government.¹ This provides both a challenge and an opportunity for new data-integration and information-sharing projects.

Information-sharing initiatives are generally complex, which increases the risk of failure and the likelihood of wasted resources. Further, the complexity of data-integration and information-sharing issues can be a deterrent for moving forward. Often the challenge is deciding *which* data-integration or information-sharing projects are the best fit for an agency or region. Unfortunately, there are no perfect solutions. Rather, there are strategies and processes by which agencies can reduce their risk and increase their certainty of achieving specific value-added benefits.

The commitment of decision makers while developing both partnerships and long-term solutions is critical to the success of information-sharing projects. The organizational changes necessary for such a paradigm shift to occur must come from the highest organizational levels. A strong commitment among agency management and leaders to a long-term strategy for information sharing and the building of partnerships will contribute greatly to the project's likelihood of success.

Experts in the field of data integration also indicate that trust and willingness to share information are critical to information sharing within the law enforcement domain. Researchers from COPLINK point out that agencies must see an immediate gain or benefit in order to be motivated to share knowledge and information. The need for an immediate or short-term value-added for an agency is an important prerequisite for creating a project design directed toward building an information-sharing and collaboration infrastructure (Chau, 2001).

Information-sharing initiatives are most likely to succeed when they are based on a comprehensive and systematic needs assessment of organizational, system, and technical requirements (BJA, 2006). The assessment provides a means for beginning the dialogue about an initial course of action and for building consensus and an understanding of the complexities involved in completing a regional information-sharing initiative. The importance of this issue is underscored by recent findings presented at the 2006 SEARCH Symposium on Justice and Public Safety Information Sharing. There, it was reported that:

- Over half of all data-sharing projects will cost 189% of original estimates.

¹ According to SEARCH, Inc., every state is attempting to integrate data systems. In addition, there are 27 local and regional data sharing projects underway. See www.search.org for more details.

- Large organizations end up with only 42% of the features and functions that they originally desired in their products.
- Thirty-one percent of data-sharing projects are canceled before completion.
- Only 16% of information-sharing projects are completed on time and within budget (Harris, 2006).

Part of the complexity of information-sharing initiatives lies in defining information sharing within a law enforcement context. Information sharing can occur within a single law enforcement agency and across multiple jurisdictions. There are also increasing mandates for sharing information at the state and local levels of government, as well as across diverse agencies within the criminal justice system. During the past decade, we have seen an increase in requirements for sharing information with non-criminal justice government agencies, as well as with the public at large. Obviously, there are multiple definitions needed for information sharing, each resulting in different strategies for data inclusion and data security.

We have defined information sharing as “an exchange of information that provides value to law enforcement agencies, both at the operations and the management levels of the organization.” The advent of computer technology has increased the opportunities for sharing information that increases productivity for law enforcement operations and management activities.

Evidence can be found regarding the benefits of increased access to information at both the operations and the management levels of law enforcement. For example, Zaworski (2005) examined the impact of the Automated Regional Justice Information System (ARJIS) on the performance of officers and investigators in the San Diego Sheriff’s Department. The findings indicated that information-sharing technology in general increases effectiveness and job performance. More specifically, Zaworski reported, information-sharing technology increased arrests for patrol officers and improved case clearance rates for detectives. The report indicated that with the technology, officers were more satisfied with the data available to help them perform their jobs, and they believed that officer safety was enhanced by increased officer knowledge in the field.

Zaworski’s findings are not unique. Research repeatedly has found that the role of information within the job functions of patrol and investigations has changed remarkably over the past decade. Both patrol officers and detectives have been found to rely upon computer systems and information-sharing technology in performing their duties. “Police detectives and patrol officers are both faced with high degrees of uncertainty and voluminous amounts of data to analyze. This makes the use of computers critical to improving field officer productivity” (Ioimo, 2000, p. 127).

Intelligence-Led Policing

The phenomenon of information sharing across jurisdictions has not gone unnoticed by those concerned with the bigger picture of terrorism prevention, problem-oriented policing, and community policing – three major themes in law enforcement. One national

trend is the movement toward intelligence-led policing. The idea of intelligence-led policing² involves “a collaborative enterprise based on improved intelligence operations and community-oriented policing and problem solving” (Peterson, 2005). At the core of intelligence-led policing is the notion that information sharing must become policy, not just informal practice, and that intelligence is contingent upon the quality analysis of data. In its simplest form, intelligence means information plus analysis (Peterson, 2005:3). Intelligence is the product of data that are collected, evaluated, and analyzed. Ideally, with intelligence-led policing, chiefs, commanders, and supervisors are provided facts, alternatives, and intelligence before they choose a course of action.

Thus, intelligence becomes critical for decision making, planning, strategic thinking, and crime prevention. It not only applies to homeland security, but to policing in general. The key is whether an agency is aware of intelligence as a concept – whether it is involved in collecting information and engaged in some form of analysis, creating a “culture of knowledge and intelligence” (Peterson, 2005: 13). Intelligence information is critical to effective decision making; however, it is often not available or incomplete at either the patrol or command levels of an organization. “In many law enforcement agencies, planning is performed without an understanding of the crime problems facing the jurisdiction and without sufficient operational input” (BJA, 2005). For this reason, the WISE initiative has solicited feedback from all levels of operations as the foundation of developing a strategic plan.

² Intelligence-led policing originated in Great Britain through the Kent Policing Model, which de-emphasized responding to service calls, instead calling for intelligence units to focus on property crime and other serious criminal behavior. See Peterson, 2005, p. 9, for more details.

Section II: The Present Study

In November 2005, ASU's Center for Violence Prevention and Community Safety was contracted to conduct a needs assessment for the implementation of the West Valley Information Sharing Enterprise (WISE). This report is one of several products that will be provided by the Center, and that are intended to begin a dialogue for creating a strategic plan. This assessment is intended to serve as a guide for the WISE Committee as it develops a strategic plan for the initial steps toward building an infrastructure that will improve information sharing for West Valley law enforcement agencies.

The needs assessment had four major objectives. The first was to define the current technological environment within West Valley police agencies. Specifically, we were interested in identifying the current technology used to collect, maintain, and disseminate information for the purpose of assessing the technological infrastructure baseline within the West Valley. The second objective of the needs assessment was to define how technology is used or consumed within West Valley police agencies. This will help with understanding how information is used to accomplish particular goals and with identifying the goals and needs of police agencies. The third objective of the needs assessment was to identify current and future data-sharing needs of West Valley police agencies. In particular, we were interested in locating information gaps and determining what information agencies need to achieve their goals. The last objective of the needs assessment was to determine the obstacles to regional information sharing among West Valley police agencies so that these might be addressed.

To accomplish the above objectives, feedback was solicited from 10 participating West Valley law enforcement agencies and Phoenix and Chandler police departments, two comparison agencies not part of the West Valley. The 10 West Valley agencies included Avondale, Buckeye, El Mirage, Glendale, Goodyear, Peoria, Surprise, Tolleson, Wickenburg, and Youngtown. We also examined more than 100 Web sites to obtain a picture of how data are used and presented in the state of Arizona and nationally. The next section describes our research setting and methods used for the present study.

Setting and Methods

This section describes the methodological strategies used as part of our needs assessment on data sharing among West Valley agencies. In particular, we describe the settings in which the study took place, explain the characteristics of the police departments examined, and discuss the approaches used to collect data.

Table 1 shows the general characteristics of the study sites. The geographic size of the jurisdictions varied substantially. For example, although four of the police departments are responsible for geographic areas of less than 15 square miles, two of the police departments are responsible for geographic areas that are more than 175 square miles in size. Likewise, police agencies varied substantially in their numbers of authorized employees, ranging from 15 employees in the Youngtown Police Department to 523 in

the Glendale Police Department.³

An examination of calls for service shows that West Valley police department workloads also vary by agency. For instance, Glendale Police Department handles more than 153,000 calls for service per year, followed by Peoria (107,646) and Avondale (75,000), whereas El Mirage and Youngtown police departments handled only 27,000 and 5,305 calls for service respectively. Similarly, study sites varied on the amount of crime taking place within their communities. For example, El Mirage, Glendale, and Youngtown report substantially more violent crime than Surprise, Goodyear, and Wickenburg, and Tolleson and Buckeye report comparatively high rates of property crime compared with cities such as Surprise and Peoria.

Table 1. Study Site Characteristics

Agency	City Sq Miles ¹	Agency Personnel ²		Estimated Calls for Service ³	UCR Data ⁴ Crimes per 1,000 pop.	
		Sworn	Civilian		Violent	Property
AVONDALE ⁺	42.92	91	49	52,410	--	--
BUCKEYE	218.57	31	10	--	2.98	74.99
EL MIRAGE	11.2	43	8	27,000	7.79	45.90
GLENDALE ⁺	56.49	384	139	153,131	5.97	57.70
GOODYEAR ⁺	117.10	68	22	31,839	2.00	47.49
PEORIA ⁺	175.94	170	80	107,646	2.31	42.85
SURPRISE ⁺	74.34	105	37	66,543	1.53	32.19
TOLLESON ⁺	5.11	26	10	10,800	4.87	124.57
WICKENBURG	13.78	10	7	--	2.16	42.16
YOUNGTOWN	1.51	13	2	5,305	5.07	42.71
CHANDLER ⁺	63.60	294	142	126,710	3.19	42.68
PHOENIX ⁺	513.7	2,916	894	1,764,259	6.68	66.57

1 Maricopa Association of Governments

2 Crime in the United States for 2004, jurisdiction noted with (+) indicates internally provided figures effective April 14, 2006.

3 Estimated calls for service data provided by individual agencies.

4 Arizona Department of Public Safety, 2004.

³ It is our understanding that the data shown in Table 1 might not be up-to-date by the time this report is distributed. Due to population growth in many West Valley cities, we found over the course of this study that West Valley police agencies were growing exponentially and communities were continuously authorizing increasing numbers of police personnel.

Table 2 shows socio-demographic characteristics for West Valley cities and the comparison study sites. The population of the West Valley sites varies considerably. The region contains four of the most populated cities in the state, yet three cities have populations under 10,000. According to 2005 Arizona Department of Economic Security population estimates, the largest population was in Glendale with more than 230,000 residents; the smallest site was Youngtown with slightly more than 4,000 residents.

Dramatic population growth is characteristic of the majority of sites. The growth rate for the entire West Valley in the past 5 years is approximately 42%. Eight of the cities experienced in excess of 25% growth, with five of these cities experiencing greater than 80% percent growth. This is substantially greater than the growth rate of the two comparison sites and of Arizona. Since 2000, Arizona has had the second fastest population growth of any state, trailing only Nevada (ACJC, 2005). Table 2 shows projected growth for these cities. By 2010, Buckeye's population is anticipated to nearly triple, and Surprise and Goodyear will increase by 47% and 49%, respectively. Cities such as El Mirage, Tolleson, Wickenburg, and Youngtown will experience slower growth. Avondale and Glendale will see growth spurts of 24% and 23%, while Peoria, Chandler, and Phoenix will grow at moderate rates of 17%, 12%, and 17%, respectively.

Table 2 also demonstrates substantial ethnic variation among West Valley cities. The percentage of Hispanic population in the West Valley ranged from a high of 78% in Tolleson to a low of 11% in Wickenburg. Avondale, Buckeye, and El Mirage have the next highest percentages of Hispanic population. The overall median household income for the West Valley cities was \$41,086. The range for the median household income for this region was a high of \$57,492 in Goodyear and a low of \$23,164 in Youngtown. Overall, however, the West Valley cities were similar to the median household income of Phoenix (\$41,207).

Agency	Population Estimates ¹					% Non-Hispanic	% Hispanic	Median Household Income (\$)
	2000	2005 ²	% Change	(Projected) 2010 ³	%			
AVONDALE	35,883	66,110	84.2	82,100	53.8	46.2	49,153	
BUCKEYE	6,537	20,780	317.8	58,600	63.3	36.7	35,383	
EL MIRAGE	7,609	29,630	389.4	29,700	33.2	66.8	33,813	
GLENDALE	218,812	236,030	7.8	290,400	75.2	24.8	45,015	
GOODYEAR	18,911	41,225	217.9	61,300	79.2	20.8	57,492	
PEORIA	108,364	137,295	26.6	160,800	84.6	15.4	52,199	
SURPRISE	30,848	78,265	253.7	115,200	76.7	23.3	44,156	
TOLLESON	4,974	5,460	9.7	6,100	22.0	78.0	38,773	
WICKENBURG	5,082	6,590	29.6	7,700	89.0	11.0	31,716	
YOUNGTOWN	3,010	4,055	34.7	5,400	87.3	12.7	23,164	
CHANDLER	176,581	231,785	31.2	260,000	79.0	21.0	58,416	
PHOENIX	1,321,045	1,452,825	9.9	1,700,300	65.9	34.1	41,207	

¹ Except where noted, socio-demographic data were obtained from 2000 Census.

² Arizona Department of Economic Security: http://www.workforce.az.gov/admin/uploadedPublications/1943_EEC05.PDF

³ Maricopa Association of Governments

Research Design

We interviewed multiple stakeholder groups because of the diverse nature of the participating agencies and their varying needs for information. In particular, we interviewed representatives from six stakeholder groups: patrol, investigations, crime analysts, CAD/RMS managers, homeland security, and command personnel. We believed that each of the stakeholder groups could offer a unique view as to their information needs, and different opinions about how a future, regional information-sharing initiative might be structured. We were interested in understanding their perceptions of information infrastructure and availability, current information use and sharing, regional information-sharing needs, and potential obstacles to regional data sharing.

Stakeholder interview schedules contained 10 to 16 questions. Although a predetermined list of questions was followed to guide discussions, participants were afforded significant range to discuss the topics and issues as they arose. This method allowed for cross-group comparisons, without sacrificing an environment in which individual groups could discuss issues of their own. Interview schedules can be found in Appendix A.

Patrol and Investigations. The focus groups for the patrol and investigator sessions varied in numbers of participating officers with the size of the groups; they generally ranged between four and seven participants. The sessions typically lasted approximately an hour. Two facilitator-evaluators were present at each session, and all sessions were audio recorded for improved efficacy. Independent notes were taken by each evaluator to maintain the integrity of their individual perceptions of each session; these were later compiled. The officers and investigators participating in the focus groups were selected by their agencies. In total, 31 focus group sessions were conducted with 176 officers from 11 of the 12 participating agencies. Wickenburg was unable to meet within the time constraints imposed by our data collection and was not included in the patrol or investigation focus groups.

Crime Analysts. Interviews were conducted with all six agencies. The interviews included a full-time crime analyst in the West Valley, and one crime analyst each from the Phoenix and Chandler police departments. Four agencies, Buckeye, El Mirage, Wickenburg, and Youngtown, were found not to have a full-time employee committed to the crime analyst function. The interviews lasted between 0.5 and 1.5 hours. We interviewed individuals who managed their crime analysis units or, in many cases, who were solely responsible for crime analysis within their agencies. Participation in the study was voluntary; all individuals who were asked to participate agreed.

CAD/RMS Managers. Interviews were conducted with communications, records, and information technology staff in all 10 West Valley agencies and the Phoenix and Chandler police departments. All interviews were conducted in a group setting. They were focused on information management and systems within each of the agencies. The purpose of the interviews was to gain an understanding of current information management within the departments. Interviews lasted between 0.5 and 1.5 hours.

Homeland Security. Interviews were conducted with five police department commanders who currently oversaw homeland security issues. These interviews were combined with those for command personnel.⁴ Four of five interviewees indicated that for them, homeland security was one of many responsibilities. Interviews lasted about one hour.

Command Personnel. Interviews were carried out with the chiefs of police and commanders in all of the West Valley agencies, except that the Wickenburg Chief of Police was not interviewed due to a scheduling conflict. The interviews were intended to provide an overview of agency information infrastructures, information about how commanders used data and shared information, and an overall assessment of the agencies' willingness to use and share information with one another. Interviews lasted about one hour.

Table 3: Data Collection Sources

Agency	Patrol		Investigations		Crime Analysts	CAD/RMS Managers	Homeland Security	Command Personnel
	# Focus Groups	# Persons	# Focus Groups	# Persons	# Persons	# Persons	# Persons	# Persons
AVONDALE	2	5	1	5	1	4	--	2
BUCKEYE	2	9	1	4	--	4	1	1
EL MIRAGE	1	5	1	4	--	4	--	1
GLENDALE	4	21	2	5	1	3	1	2
GOODYEAR	1	4	1	4	1	1	--	1
PEORIA	2	18	2	7	2	2	--	2
SURPRISE	2	15	1	7	1	1	1	2
TOLLESON	1	11	1	3	1	2	1	1
WICKENBURG	0	0	0	0	--	1	--	1
YOUNGTOWN	1	5	1	2	--	1	1	1
CHANDLER	1	10	1	8	1	2	--	--
PHOENIX	1	15	1	9	1	6	1	3
TOTAL	18	118	13	58	9	31	6	17

⁴ In Table 3, we did not double count these individuals.

In total, for the current needs assessment, we interviewed 239 sworn personnel and civilians and we held 31 focus groups, from 12 police agencies. The findings of our interviews are contained in the following sections. Although for the most part, the responses were quite consistent across the groups, some differences will be discussed. In addition, on some occasions, individuals within the groups (patrol and investigations) presented conflicting information. Given the complexity and rapid growth of information technology and individual information systems, this was expected.

Web Site Applications. To obtain further insight into the ways in which police departments and other criminal justice agencies use and present data, we examined more than 100 Web sites. We wanted to determine whether agencies outside of this study used specific software applications for data collection, mapping, and analysis. In addition, we wanted to obtain a picture of how data are more generally used and presented to the public in the state of Arizona and nationally. The Glendale Police Department provided a list of law enforcement and criminal justice agency Web sites from across the country and Arizona.

Section III: Patrol Officer Findings

Overview of Information Systems

Each focus group opened with introductions of the participants and a brief overview of the scope of the project. We began the discussion by inquiring what information technology (IT) hardware and software was available to officers in the field and how comfortable they were using these tools. They were asked for their perceptions of the performance of their in-field IT resources.

Fourteen of the groups identified the squad car computer, or mobile data computer/terminal (MDC/MDT), as the primary piece of IT equipment used by their agencies. The other two agencies, Youngtown and El Mirage⁵, did not have MDCs in their vehicles.⁶ A majority of the groups (69%) also identified their agencies' record management systems (RMS) as being available, although only five groups identified the call for service (CFS) or computer-aided dispatch (CAD) systems as part of their IT equipment. The responses to this question could suggest that for some agencies, the line between their RMS and CAD systems might be fairly seamless, so that officers were less aware of differences between the two.

Officers reported that they were comfortable with their systems and found them generally reliable; the systems were easy to use and data was easy to retrieve. Some officers (from four groups) complained that their systems were slow. The following problems with IT systems or devices were also cited: "time-consuming to use," "limited training on system," and "not user-friendly."

Officers in the focus groups said that the bulk of the information they had available in the field was person data, directly related to specific individuals. Specific characteristics and information about an individual were most frequently identified as the items accessible to officers in the field. These data included names, social security numbers, dates of birth, physical vitals (i.e., height, weight, hair color, eye color), and race or ethnicity.

Several groups indicated difficulties with obtaining address-level (place) information while in the field. Only six groups indicated that they had access to information about a person's last known or previous addresses. Ten groups stated that they could retrieve information about a driver's history (e.g., suspended license, prior DUI) and outstanding warrants and warrants (available through NCIC/ACIC). Nine groups reported having access to comprehensive information regarding their own agencies' prior contact with a person, and eight groups reported that they retrieved criminal histories through dispatch's use of an ACJIS terminal.

The most commonly discussed property data were vehicle registration and plate information from the Motor Vehicle Division. Seven groups reported having access to

⁵ El Mirage, in conjunction with Arizona's Office of Homeland Security and the Maricopa County Sheriff's Office, is in the process of implementing MDC technology, expecting completion in the coming months.

⁶ In non-patrol officer interviews, we found that Wickenburg also lacked laptop computers in vehicles.

vehicle registration information. Other property-related information, chiefly about stolen property, was identified as what typically would be found in NCIC/ACIC sources. Four groups named NCIC/ACIC; five cited stolen or recovered firearms and six cited access to stolen property information from other jurisdictions, in accord with NCIC/ACIC definitions. The latter reported that they could also search property criteria for stolen or recovered property within their own jurisdictions.

Information as it related to physical locations, whether places of business or residences, was largely unavailable, in the perceptions of our participants. Seven groups identified call for service (CFS) histories for given addresses as available, but that information was limited to whatever dispatch and the responding officer may have captured at the time of the original call. For example, an officer might access the CFS history at a particular address and find previous calls to that address, the nature of the calls, the responding officers' disposition codes (e.g., arrest, report taken, no action), and perhaps brief narratives (e.g., "arrested Subject 1 told Subject 2 not to return to address until tomorrow," or "no action taken"). Officers described CFS information as limited, noting that often the history will not go back far enough, or it might fail to distinguish between apartment numbers within a given complex. Brief narratives and disposition codes were frequently incomplete, providing insufficient information for an officer to base action upon. No other location-specific data elements were mentioned by more than four groups, including address searches, hazard flags, mapping or routing information, and information about the current occupant or owner of the given address.

The various groups identified nearly three dozen distinct information sources and resources as available in the office, but not available in the field. Three groups indicated no significant gaps between the types of information available to them both in the office and in the field. El Mirage and Youngtown indicated that although they could get the same information whether in the office or in the field, they were required to go through their dispatchers for field information needs because they did not have MDCs. The most frequent gap reported between the types of information available from the office and the types available from the field involved NCIC/ACIC databases that were not available from the field (five groups). Three groups reported not having access to ACJIS and complete reports with full narratives.

When asked whether they would like information that they did not currently have available in the field, participants were able to identify nearly 50 items. The majority fell within the categories of person data and operational information. These were evenly distributed between the two categories, and accounted for 80% of the items mentioned. The remaining 20% fell into the combined categories of place and property. One officer noted that "the system is good, it's easy to use, but we can't get anybody else's info...and that's not enough."

Forty percent of the focus groups requested information or MDC access to information that would enhance their pool of data about individuals, whether suspects, victims, witnesses, or contacts. The data element requested most often was a photograph attached to personal data, either a driver's license photo or booking photo. Even those agencies

currently able to retrieve photos asked that the service be expanded to include photos from other agencies. Currently, some agencies can view booking photos for individuals arrested and booked by their own agency, but the officers found this insufficient. They wanted their systems to include MVD photos and photos from other agencies; eleven groups requested photos from at least one and preferably both sources. One officer asked for “booking photos, driver’s license, anything with a face.” Other person data requested by five or more groups included criminal histories, driver’s license histories, officer safety hazards, prior contact with other agencies, and direct access to PACE from MDCs.

Feedback was solicited from agencies regarding performance of duties and desired improvements to the hardware and software of their current systems. In this category, both El Mirage and Youngtown (agencies without MDCs) requested to have MDCs in all patrol vehicles. Seven groups requested the most commonly desired operational enhancement: MDCs with e-mail and/or instant messaging capability. Officers wanted to communicate among themselves and across shifts while in the field, and to have briefings electronically disseminated and available during the shift.

Officers also wanted MDCs to give them access to hot sheets of persons flagged for Attempt to Locate (ATLs), recently stolen vehicles, and areas of recently increasing criminal activity (e.g., burglaries, auto thefts). They wanted access to complete reports with full narratives and to the Internet. One officer from El Mirage explained:

...we *need* MDTs, where we can get prior contacts with other agencies with names, addresses, photos, physical descriptions, vitals, stolen vehicle and property searches, access to full reports and narratives, driver’s history, GPS with mapping and routing info, with touch-screens, a full-sized illuminated keypad, oh, and officer safety alerts, whether it’s medical, or violent, or a drug house.

Information Sharing and Analysis

One of the two most commonly requested items related to property or location data was mapping and routing information, provided by a GPS unit, to guide officers to unfamiliar addresses when responding to calls for service. An officer in one focus group was explicit about wanting “a mapping system with routing info, like a GPS, and topo or aerial photos, lot plots, and street maps.” The other item most commonly requested was the ability to do comprehensive license plate and registration checks directly from MDCs. Five groups requested direct access to NCIC/ACIC from their vehicles, and three groups asked for the ability to search firearm serial numbers.

Ten focus groups representing eight of the nine agencies rated the process of information sharing among officers within their own agencies as “poor,” with eight groups from six agencies citing a lack of routine and reliable information sharing between precincts and shifts. Asked about the information that *was* shared, officers most frequently reported that it pertained to addresses to be aware of and other officer safety issues. Eight groups from six agencies indicated that briefing packets for a given shift, either hardcopy or e-mail, were the most common means of sharing information with patrols.

Asked what information was wanted from other officers and investigators within their own agencies, the majority (ten groups from seven agencies) asked for Attempt to Locate (ATL) suspect information. Six groups from four agencies wanted to be aware of areas or addresses either to watch or avoid, and five groups from four agencies wanted information about ongoing investigations and what a patrol officer's response should be if encountering a person or location related to the investigation. An illustration of this need was provided by an officer who explained that "being unaware if detectives are working a house could blow the investigation, or put us in danger, not knowing what we could be walking into."

Nine groups representing six agencies reported very limited (poor) communication and information sharing on the part of other agencies. Often, such communication occurred during rare and coincidental face-to-face contacts between two officers; this was reported by seven groups from five agencies. The most commonly shared information across jurisdictions, reported by seven groups from six agencies, was Attempt to Locate (ATL) alerts for persons, stolen vehicles, or vehicles suspected in a crime. Some groups described, as an example of typical cross-jurisdictional information sharing, a scenario in which sergeants from two different agencies would park together somewhere, each listening to the other's radio traffic and then relaying it over their own radios.

ATL alerts for persons or vehicles was the information most wanted from other jurisdictions, reported by six groups representing six agencies. Four groups from four agencies wanted crime trend data from neighboring communities, or better, from across the metropolitan area. Other information desired by at least three groups included the following: (a) ongoing investigations, (b) criminal histories, (c) officer safety issues or hazards, (d) prior police contacts, (e) compatible radio frequencies, (f) e-mail or instant messaging in the field, (g) MVD or booking photos, and (h) more detailed person data, including known family and associates linked to a person; scars, marks, and tattoos; and last known addresses.

Not all agencies had full-time crime analysts, but most patrol officers were aware of the kinds of resources and services that an analyst could provide. Asked what information they would want from crime analysts, 10 groups representing eight agencies answered that they wanted predictive maps. Although their preferences varied between predictions based on zones and predictions based on timeframes, the groups were in agreement on the desirability of geographically based guidance for proactive policing efforts. Three additional mapping deliverables were requested by nine groups: (a) beat-level crime trend data, requested by six agencies, (b) hot spots, or areas with recently high crime rates, requested by six agencies, and (c) crime trends by location or area of the city and by crime type (e.g., construction site burglaries, auto thefts, home invasions), requested by seven agencies. About products and services offered by crime analysts, officers commented that crime trend maps were "good to structure patrol time," for letting officers know "what's going on in my area," and for showing trends in "preventable crimes."

Homeland Security

Eight groups from five agencies reported having received some training in how to respond during an incident involving a weapon of mass destruction (WMD), whether radiological, biological, chemical, or other. Nine groups representing six agencies reported receiving training in the Incident Command System (ICS). The five agencies that reported receiving WMD training were among the six agencies that reported receiving ICS training, illustrating that the two most commonly reported trainings were being offered by the same agencies. Glendale and Peoria reported receiving mobile field force or riot control training. Also of note, five groups representing four agencies reported that the frequency and quality of their major incidence response training had been poor or inadequate. Two groups from separate agencies rated the mobile field force training negatively, with one commenting that “we trained with Scottsdale, Tempe, and Gilbert - nobody from the West Valley, nobody who would actually be close enough to help.” Another commented, “It’s a joke. It’s like marching band practice.”

When asked what kind of information would be most useful or desirable when responding to a major incident, 11 groups from eight agencies said that the most important information for patrol officers to have is the specific hazard or threat level involved. Eight groups from seven agencies wanted routing information for incoming emergency responders or for evacuation routes. Other frequent requests were for perimeter information (seven groups from six agencies) and for more interagency training (nine groups from six agencies).

Phoenix and Chandler Patrol Focus Group Summary

Focus groups were held with the Chandler and Phoenix police departments for comparative purposes. Based upon the outcome of the focus groups, the Chandler Police Department had more needs in common with the West Valley law enforcement agencies than did the Phoenix Police Department. Chandler aligned more closely with the West Valley agencies regarding the need for specific data elements such as ATLS, file stop information, and other agency crime trends. For the most part, the Phoenix Police Department reported having better access to internal information and across jurisdictions; therefore, it did not have the same needs as the West Valley agencies. The Phoenix agency did share the interest of Chandler and the West Valley agencies in having crime trend data across jurisdictions, photos, and officer safety information. Overall, responses from the Chandler and Phoenix police departments were consistent with typical responses from the West Valley agencies, even though some differences were noted.

Major Findings: Patrol

- Agencies without MDCs (El Mirage, Wickenburg, and Youngtown) need this equipment.
- Consistencies in reporting occurred across agencies, regardless of agency size.

- Agencies across the board expressed a strong need to be able to retrieve photos from the MVD, whether booking photos or photos from other criminal justice agencies.
- Better access is needed to information within agencies directly from MDCs, rather than through dispatch or across agencies.
- Greater deficiencies in technology appeared in smaller jurisdictions.
- Many groups and agencies implicitly or explicitly identified a need for training in the capabilities and use of their respective systems and processes.
- Better access to ACJIS information is needed.
- Better access to PACE information is needed.
- Increased information from crime analysts is needed, including:
 - predictive maps,
 - crime trend information for agency and surrounding jurisdictions, and
 - hot spot analysis.
- Better ability to share geographic or address-level information is needed.
- Although not within the scope of this study, the need for interagency radio communication is an issue for West Valley law enforcement agencies.

Section IV: Investigator Findings

Overview of Information Systems

Evaluators began sessions with investigators by inquiring what information technology (IT) hardware and software was available to them, how comfortable they were using these tools, and their general perceptions of the technologies' performance. All groups of investigators reported having access to a desktop computer at their stations. Five groups from five agencies reported having a field radio, a cell phone, and Internet access in the office. Five groups from five agencies reported having difficulty getting access to databases or extracting data from their systems. Only three groups from two agencies reported being completely comfortable with their systems. One of those groups stated that its system was "very easy to use...but it's limited to locally inputted data only." Another group reporting difficulties said that "it left a lot to be desired."

The information that investigators reported as being available through their systems was primarily person data, but it included data elements tied to property or location. Of approximately 45 different data elements identified by the investigators, more than 71% were person data; 15% was place data, and 15% was property data. The investigators' emphasis on person data is a strong indication of the type of information they routinely want and need. More than 30 types of person-related information were cited by investigators, including information gathered from a variety of sources. The list of information resources investigators currently use in the office includes the following: Immigration and Customs Enforcement (ICE), the AZTEC court record system, the Rocky Mountain Information Network (RMIN), Arizona Child Protective Services (CPS), the Federal Bureau of Investigations (FBI), the Arizona Department of Corrections (ADC), and the National Insurance Crime Bureau (NCIB).

Six groups representing six agencies said that they had access to comprehensive criminal history records and internal arrest records. Six groups from five agencies reported also having access to Field Interview (FI) cards gathered within their own agencies. Seven or more groups from six or more agencies reported that for persons entered into their systems through a prior contact or arrest by their agency, they had access to names and aliases; physical descriptions (height, weight, hair color, eye color); scars, marks, and tattoos; race/ethnicity; date of birth; social security number; and address and contact information.

Nine groups from eight agencies said they could use a serial number or vehicle identification number (VIN) to retrieve information that had been entered into their agency's system regarding stolen property. Seven agencies reported being able to search for stolen property information entered in their systems using property descriptions. Six groups from five agencies said they had the ability to check the status of property that had been logged into their systems, whether as evidence, stolen, recovered, or some other status. Investigators said that although they could search for a specific piece of property, usually by serial number, property entries were not typically cross-referenced; they could

not retrieve an inventory of all property entries attached to a single report number without reviewing the original report narrative.

The most commonly identified place-related data were from Call For Service (CFS) histories, reported by eight groups from seven agencies. CFS data includes the nature of the calls, time of occurrence, who responded, action taken, and whether or not a report was generated. Seven groups from seven agencies said that they could retrieve information for a given address about different individuals who had been contacted there. Only three groups from three agencies mentioned having flags for addresses that would alert officers to specific hazards or potential officer safety issues.

Investigators overwhelmingly wanted access to the same data in the field that were available in the office. Nine groups from eight agencies requested mobile data computers or terminals (MDC/MDT) or laptops for use in the field, preferably with full access to their agencies' record management systems (RMS). Nine groups from seven agencies wanted MVD or booking photos linked to name searches from Maricopa County or other local jurisdictions. Six groups from six agencies asked for direct MDC access to warrant checks for all local, county, and statewide agencies. Four other desirable items were identified by at least four groups from four agencies: (a) field access to NCIC/ACIC records, (b) access to PACE from MDC, (c) officer safety alerts, and (d) electronic access to FI cards. One detective described their dilemma succinctly: "We don't have laptops or MDTs, so we have no database access in the field." An investigator from a different jurisdiction wanted "access to full narratives" and "access to MCSO bookings, with photos, facility info, everything."

Information Sharing and Analysis

Five groups from five agencies said that they shared "almost everything" with other officers and detectives within their own agency. Eight groups from seven agencies reported sharing Attempt To Locate (ATL) suspect information, and six groups from five agencies said that they shared ATL information about persons for whom the investigator had probable cause for an arrest. Five of the investigator groups from five agencies said they also shared officer safety or hazard information routinely.

Field Interview (FI) card information was the most commonly requested item among the investigator focus groups, mentioned by six groups from six different agencies. Five groups from five agencies placed a high priority on information specific to suspects and witnesses and their associates. Detectives in three agencies wanted more detailed reports from their patrol officers. The value that investigators placed on these three elements further illustrated the importance attributed to person data. One detective, describing the use of FI cards, said they were "the best intel, but they're *very* delayed." This statement expressed not only the value the detective placed on FI card information, but the importance of having the most recent and relevant data. The impact of the chain of information exchange between patrol officers and investigators on investigations was supported by another detective who explained that "patrol often has a lot of intelligence

info about people and activities,” implying the importance to investigators of getting that information.

The most common means of sharing information across jurisdictions by investigators was reported as some form of monthly meeting of regional investigators. Nine groups from eight agencies identified a routine investigators’ meeting as the typical means by which they share information, with the most frequently mentioned being the West Valley Investigators Association monthly meeting. These meetings typically include information about a series of linked cases, known details about an unknown suspect or investigative lead, recent trends and updates, and any other information a detective may want to share regarding ongoing cases.

Investigators placed a high priority on person data from other jurisdictions, especially data from FI cards that reflect all prior contact with any agency in the county or state. They also would like detailed information about suspects in open cases, such as name and vitals, last known address, vehicles registered to the person, and known associates and their contact information. A detective from one agency stated simply that he wanted “everything from everyone.” An investigator from another agency asked for “person data from any and all agencies.” Both of these statements exemplify the desire of investigators to have improved access to person data from other jurisdictions. Seven groups representing six agencies wanted information about ongoing investigations in other jurisdictions that might affect their own or that have parallel interests. Additionally, five groups from five agencies wanted crime trend data from other jurisdictions, particularly from those who share a border.

With the exception of a single group, investigator focus groups identified predictive trends as the most desirable crime analyses for their work. Predictive maps and trends identifying probabilities of when and/or where the next in a series or type of crime might occur were most favored. Seven agencies also asked for general crime trend data. Six wanted crime-specific hot spot data and four requested general mapping or geographic analysis. One group asked for predictions about specific crime types with probabilities for different days, times, and locations, making the forecasting “as narrow as possible.” Another wanted better forecasting and prediction maps, and added, referring to municipal boundaries, that “border trend data would be helpful.” Two groups without a full-time crime analyst asked for one. One detective, asked what he wanted from a crime analyst, exclaimed, “Anything!”

All but one agency reported having at least one unit-based database that stored a variety of information that was not part of the agency’s standard system. Examples of the unit-based databases included: (a) repeat offenders, (b) street crimes, (c) drug/narcotics investigations, (d) sex offenders, (e) robberies, (f) gangs, (g) pawn records, (h) traffic services, (i) entertainment district enforcement squad, (j) case management files, and (k) victim advocates. The only unit-based database that investigators said would not likely be made available to anyone outside the given unit was the one for victim’s advocacy. All others could be made available at least in part, if not entirely. Most agencies would be willing to share their unit-based databases, but at least one said that they preferred to

share information with investigators based on specific requests and that they would not want to have “proactive distribution” or on-demand open access to other agencies.

Homeland Security Training and Information

Investigators received training more frequently than patrol groups, with six or more groups and agencies receiving training in Hazmat recognition and response; the proper application and use of personal protection equipment (PPE), or protective suits, eyewear, gas masks, and the like; and Incident Command System (ICS) training. ICS training occurred locally and in Anniston, Virginia. Law enforcement officers were provided training on policies and procedures to govern major emergency events of a radiological, biological, chemical, or other catastrophic event. ICS training focused on command and control procedures, roles and responsibilities of first responders and support personnel, and staging, routing, and perimeter control techniques. The groups indicated some dissatisfaction with training. For example they commented that their WMD training was too brief (a single 8-hour class), and that the school shooting scenario training was 4 years ago and they had received no follow-up training. Participants also indicated that they needed “more hands-on training” and “mutual aid training.” Generally, the groups felt a need for greater cooperative training among West Valley agencies, with higher standards of competency and proficiency and more frequent repetition.

Investigators were asked to provide the most important information needed when responding to a major incident. The information cited as most important by the majority of agencies was the location of the incident command and the staging areas for various responders. Closely behind, with nine groups from eight agencies agreeing, is the specific nature of the problem: Is it a shooter? Are there hostages? Is it a chemical spill? Was there an explosion? They also need to know the type of hazards present, the threat level to responders and the public, and any other type of information available about the nature and extent of the incident. Also of note, seven agencies identified interagency compatible radio contact as critical, and six groups from five agencies wanted to know their roles and responsibilities at the scene.

Phoenix and Chandler Focus Group Summary

Focus groups of investigators were conducted in Chandler and Phoenix as comparison groups for the West Valley agencies. Overall, detectives in Phoenix and Chandler expressed resources and needs in common with their West Valley counterparts. For issues related to information systems, Chandler reported the same IT resources that were most frequently cited by West Valley detectives, including a computer in the office with the agency’s RMS and Internet access, and only having radios and/or cell phones in the field. Phoenix agreed on eleven of the thirteen most frequently identified data elements available through the given agency’s system, including various person data elements (names, aliases, physical descriptions, demographics, addresses); internal arrest records; comprehensive criminal histories; stolen property entries; and CFS histories. Neither Chandler nor Phoenix reported any difficulties accessing or using information from their respective systems.

For responses related to information sharing and analysis, Phoenix also expressed a desire that was strongly aligned with that of agencies from the West Valley for information available in the field. Phoenix and Chandler both shared and wanted information from within their own respective agencies and from other jurisdictions, compatible with the most frequently identified elements among West Valley agencies. Regarding information from crime analysts, Chandler detectives expressed a desire for more specific crime trend data, but Phoenix largely expressed complete satisfaction with the products and services currently available from their crime analysts, an opinion that only one West Valley group shared. Both Chandler and Phoenix reported using unit-based databases and expressed a willingness to share some of that information with other law enforcement agencies.

Phoenix and Chandler detectives reported having received both Hazmat and PPE training, but Phoenix detectives also reported having received ICS, National Incident Management System (NIMS), WMD, and Mobile Field Force training, as well. Both Chandler and Phoenix agreed with the majority of West Valley agencies that interagency radio compatibility would be critical for a major incident response, and Phoenix also agreed with the majority of West Valley agencies in identifying the importance of knowing the nature and level of the threat, and information regarding the locations of command and control, and of various staging areas.

For those items that would be most important to any data sharing initiative, Phoenix investigators identified three of the top four items identified by West Valley agencies: shared RMS data, prior law enforcement contact data, and photographs. Chandler did not identify any of the common West Valley data elements, but did place an emphasis on more detailed person data. Overall, investigators in the Phoenix focus group seemed more in line than Chandler detectives with the perceptions and concerns of the West Valley groups.

Major Findings: Investigators

- Most investigators had no field access to departmental information resources, other than through radio dispatch, unlike patrol's access to MDC/Ts.
- Investigators make significantly greater use of person data, primarily related to:
 - Names, aliases, descriptors, demographics, and identifiers;
 - Known associates, last known and previous addresses, and contact numbers; and
 - Prior contact with other law enforcement agencies.
- Focus groups reported their use of property information was primarily to search for and identify stolen property and vehicles.
- Call For Service histories and the people contacted at a given address were the most common use of place data by investigators.
- All investigators had access to computers and a variety of database, Internet, and software resources in the office, but these were not routinely available in the field.

- Attempt to Locate alerts are the most common type of information shared by detectives within an agency.
- Detectives want more frequent and timely use of Field Interview card information from patrol officers within their agency.
- Information derived from Field Interview cards generated in other agencies is important to investigators.
- Investigators primarily use meetings (typically attended monthly) as a means of sharing information with members of other agencies about ongoing cases, suspect details, and modus operandi patterns.
- Access to crime trend data from neighboring jurisdictions was also requested.
- Prediction trend maps were identified as the most useful and/or desirable product from crime analysts.
- Most agencies have at least one unit-based database used by investigators and are willing to share them with other law enforcement agencies.
- The majority of investigators received some form of training in major incident response strategies and procedures.
- Investigators identified the most important information to have during a major incident as:
 - Staging areas
 - Command and control location
 - Nature and level of threat
 - Specific role and responsibility at scene
- The list of most-wanted for investigators included:
 - Access to internal and interagency RMS data in the field
 - Person data and prior police contact from other jurisdictions
 - Cross-jurisdictional radio compatibility
 - Photos – MVD/Booking – available electronically in the field

Section V: Crime Analyst Findings

Information Infrastructure

Crime analysts were asked about the kinds of data that they had access to for analytic purposes. Our interviews indicated that most of the crime analysts were limited to data obtained through their agencies' CAD/RMS systems. The only exception was the Glendale Police Department. The Glendale analyst had eight sources of data available for analysis: CAD/RMS, arrest, traffic, person, gang, probation, and data related to unit-level activities, persons, and places that were involved with drug activity.

We asked about the data collection software that the crime analysts used with their CAD and RMS systems. Crime analysts from Surprise, Avondale, and Tolleson indicated that their agencies relied on software products from Spillman Corporation. The Peoria Police Department relied on a software package from HTE Corporation, and the Goodyear Police Department uses New World System, a product similar to Spillman's. The Glendale Police Department was the only agency that developed its own software for CAD/RMS. The Glendale system, developed by the city's IT section in 1985, is called CHIPS (Computer Handled Incident Program System). City information technology (IT) departments support the CAD/RMS systems for all of the interviewed agencies, with the exceptions of the Goodyear Police Department, where CAD/RMS is managed by the city telecommunications department, and Surprise, where the police department manages the CAD/RMS and the city IT and telecommunications department provides network support.

All of the crime analysts were asked about the analytic software they used on the job. Four of the six analysts stated that they used Microsoft products such as Access and Excel. Analysts from three agencies stated that they used ArcGIS for crime mapping, and three analysts stated that they used ATAC (Automated Tactical Analysis of Crime) to examine crime trends by day of week, time of day, and offense type. Two crime analysts stated that Spillman provided a number of prefabricated queries to produce canned reports, and one crime analyst explained that he also uses software products such as Curve Expert, Crime Stat, and I2. One analyst used RIGEL for geographic profiling.

Geographic Information Systems (GIS) Capacity

We asked the crime analysts whether their cities had a geographic information system (GIS) section or department and if so, whether they had access to it. All of the analysts stated that their cities had a GIS section or department, with the exception of Tolleson. Likewise, all of the crime analysts except Goodyear's stated that they had *access* to their GIS section or department. In Goodyear, the analyst explained that because of recent, rapid growth and development, police requests for crime mapping and other GIS-related matters were not a high priority for the GIS department, and thus, they still had limited access. Surprise Police Department's analyst explained that their city's GIS department was always helpful in providing crime maps to the police. The analyst at the Glendale Police Department said that their unit actually had more capacity for crime mapping than

the city's GIS section did; he attributed this to the availability of data and their experience and training in conducting crime analysis and mapping. Perhaps the most interesting GIS infrastructure was found in the city of Avondale. Avondale's crime analyst explained that the city had an informal GIS committee comprised of representatives from fire, police, utilities, and engineering. That committee meets regularly to share ideas, data, and shape files pertaining to schools, crime, roads, floor plans of apartment complexes, and other critical infrastructures.

With one exception, all of the crime analysts stated that they used or had access to ESRI products. Although two of the agencies still used ArcGIS v. 3.2, all agencies expected to have access to v. 9.0 in the near future. Of the six analysts interviewed, only one (Tolleson Police Department) did not have access to any ESRI product, but that one was able to conduct crime mapping through Spillman, which includes queries for rapid production of crime maps and other geographic forms of analysis.

Perceived Reliability, Validity, and Timeliness of Data

We asked the analysts about the reliability and validity of their data. Although all of the crime analysts believed that their data had been generally reliable and valid in recent years, they were able to identify data elements that were weaker relative to the rest of their data. Modus operandi (MO) were the most commonly cited examples. Specifically, analysts stated that officers and detectives rarely took time to complete MO information. Often this information was either missing from the records or officers had not included specific data elements. For example, officers might fail to include information pertaining to the method of entry into the home, in the case of a burglary, or language used, in the case of a robbery. Analysts explained that many officers do not like to enter data and MO data is easy to omit from reports. Three analysts explained that physical descriptions of suspects are not detailed in reports and officers frequently failed to include information on the suspect's weight, height, physical identifiers, and age. Two analysts stated that a major problem with their data was related to geo-coding. They maintained that officers often did not include the address of the crime or failed to confirm the location of the crime when that field was automatically populated as part of the data-capturing process.

Four analysts explained that problems with data occurred because their officers did not correct erroneous dispatch data. For example, if a citizen called the police about a burglary, when in fact it was a theft, the officer who investigated the original call might fail to contact the dispatcher to change the offense code entered into the CAD/RMS system. The analysts also said that in some instances, when property was recovered, officers would not update the report in the CAD/RMS system. Two crime analysts stated that their agencies' property data were not reliable. This was particularly problematic in Glendale where the majority of property data was kept in physical files and was missing from the department's electronic information system. One analyst believed that his agency had poor quality control on electronic records and that there were problems with the way data fields were automatically populated. One analyst said that because of this, time and date data were often unreliable.

We asked crime analysts about their perceptions of the *most* neglected information on reports. Four of the six analysts stated that MO data were the most neglected. Many pointed out that in the case of burglaries, information such as mode of entry is often missing (e.g., cut lock, “crash and dash”). At least one analyst explained that in as many as 95% of reports, MO data are missing. Three of the analysts stated that physical description data were the most neglected. They stated that officers often failed to include such information as physical marks, scars, tattoos, hair length, and general appearance on their reports. Two crime analysts stated that specific information regarding stolen property was not regularly entered into their department’s information systems, and one analyst expressed having little confidence in his department’s address data.

We asked the crime analysts in each agency about the timeliness of their data. Most of the analysts indicated that their data were fairly timely, and referred to policies that required reports to be entered into their information systems within a reasonable period. From our interviews, we found a clear relationship between agency size and the period of time taken to enter data: The larger the agency, the longer it took to enter data. For example, in Goodyear, Tolleson, and Avondale, reports were required to be entered electronically by the end of each shift. If there were extenuating circumstances, officers could request a few more days to complete this task. In Surprise and Peoria, it could take up to 7 days for data to be entered into the information system and to become available for departmental use. In Glendale, the largest police department in the West Valley, data is less timely. Many reports might not be available in the department’s information system for as long as 20 days. Due to such delays, the Glendale Police Department has instituted a prioritization system. Those arrested and booked in the city’s jail facility are entered first, followed by crimes against persons, and then by property crime reports.

Information Sharing Infrastructure

We asked crime analysts about the software applications they used for data sharing and terrorism prevention. Four of the crime analysts stated that they relied on Microsoft Excel to share information within and between agencies. Three agencies reported using Microsoft Access. One agency reported using ArcGIS for space-based information; another relied upon ATAC (Automated Tactical Analysis of Crime) to share data pertaining to crime; still another used PDF files to share information. We found that four agencies (Avondale, Surprise, Buckeye, and Tolleson) used Spillman products and that they would soon have the capacity to share their CAD/RMS data through a central node housed at the Department of Public Safety.

Likewise, we asked crime analysts about their perceptions of the most applicable or useful software for sharing information across jurisdictions. Three of the six crime analysts believed that COPLINK was the most useful because it already was in use by Phoenix and Tucson, two of the major police agencies in the state. Two analysts agreed that Spillman had a strong product for sharing information, but one stated that this preference was based on the fact that their agency already was using it. The other stated that COPLINK would be just as effective; he was “not that happy” with Spillman because it did not permit in-depth, aggregate analysis of crime problems. One crime analyst stated

that he was not sure which system would be best, and another believed that Microsoft Access would be best for data sharing.

Information Sharing

We asked analysts about the information they shared with other jurisdictions. Four of the six analysts stated that they did share information with crime analysts and detectives outside their agency. The Surprise Police Department's representative stated that they did not share much information yet, but would in the near future. Tolleson's representative stated that they shared information only with Buckeye Police Department, with whom they had a data-sharing arrangement. The other four crime analysts (Avondale, Peoria, Glendale, and Goodyear) said that they most often shared information pertaining to patterns of crime (e.g., MO data) to determine the extent to which crime series might be taking place across the valley within their jurisdiction. Two agencies reported that they shared crime report information and information related to stolen property; one shared sex offender data, one shared information on border crime patterns with adjacent police agencies, and one shared information on population trends and uniform crime statistics.

We asked crime analysts about the types of data and information that they would like to obtain from other jurisdictions. All six of the crime analysts stated that person data were most needed: a person's last known address, criminal history, potential for violence, and a photograph. Four agencies identified a need for MO data to spot crime series events, and two analysts stated that they needed information that could be obtained through the RMS systems of other agencies. One analyst also expressed a need for crime trend data, and another wanted information on vehicles.

Crime analysts were asked about the types of data they most often used from their information systems. Four of the six analysts stated that they frequently used place-based data to examine hot spots. Analysts explained that these data were used by patrol officers and operation level managers for the purpose of directing patrol activities and for allocating resources. Two of the analysts stated that they used data from police reports to examine offense patterns within the city. Additionally, two analysts stated that they used Calls for Service data for presentations at city council meetings. One analyst used event data to look for series crimes, and another used person data to help officers obtain mug shots and to identify persons on probation or who had outstanding warrants for arrest.

We also asked crime analysts about the data that they provided to their officers and detectives. We found that analysts shared different types of data with each group. Four of the analysts shared information with patrol for the purpose of helping them guide their directed patrol activities. Specifically, they provided them with information on crime trends by time, day of week, and location. Three of the analysts shared "look-out-for" information with patrol officers. This included information on wanted persons and vehicles that patrol officers should be on the watch for. Surprise Police Department's crime analyst shared information on traffic trends and person data related to outstanding warrants and those on probation. Goodyear's crime analyst provided that agency's patrol

officers with information about crime series taking place in their jurisdiction and in surrounding areas.

Crime analysts also shared different types of data with their investigators. For example, in Avondale they shared information about where crime was occurring in the city, and in Glendale they provided information on persons who were suspected or wanted for particular crimes. In Peoria and Tolleson, crime analysts stated, they worked with detectives to put “pieces of the puzzle together” using any and all data available, to provide detectives with information that might help solve a crime or locate a suspect or witness.

We asked the crime analysts what information they would like from their own agency’s officers and detectives. Three analysts wanted more MO information. Specifically, they were interested in data on emerging crime patterns for the purpose of identifying series crimes that might be preventable. Some analysts were specific in the types of MO information that they wanted, and they wanted officers and detectives to report not only what they found, but also what they did not find. Two analysts commented that they wanted more of the information obtainable through Field Interview (FI) cards such as suspect names, physical descriptions, known associates, vehicles, and last known addresses. One crime analyst stated that he simply wanted officers to fill out the existing forms properly and to include all information requested by the department.

Homeland Security

We asked the crime analysts to describe the software applications or analytic methods that they would find most useful for terrorism prevention. Most were uncomfortable answering this question due to lack of familiarity with data issues and needs pertaining to homeland security. Two analysts stated that the question was not applicable in their positions within the police agency. The remaining analysts did not respond by naming specific software programs, but stated that person data would be useful for terrorism prevention. They explained that data on traffic stops and field interviews and other general intelligence helped them assess high-risk, violent persons who might have the capacity to engage in activities that would threaten the community. These analysts explained that it would be helpful to know about such high-risk individuals’ identification, vehicles, places of residence, and access to weapons and explosives.

One of the crime analysts believed that it would be helpful for officers to have access to Crime Capture. This is a program provided through the Department of Public Safety that allows agencies access, using a dummy terminal, to booking photos and driver’s license data. At this time, the crime analyst stated, this information is not available to officers in the field, but it is desperately needed. One other crime analyst believed that I2 would be helpful for agencies sharing social network data across jurisdictions. He cited as an example being able to use field interview data or data derived from the soon-to-be-unveiled Gang-net program to better identify and assess threats from criminal organizations.

Phoenix and Chandler Focus Group Summary

Interviews with crime analysts in both Phoenix and Chandler suggested that West Valley police agencies had much more in common with Chandler than with Phoenix with respect to the crime analysts' functions. Interview data obtained from the Chandler crime analyst suggested few differences between Chandler and the model West Valley police agency. On the other hand, the Phoenix crime analyst indicated that her unit had substantially more resources than West Valley agencies or Chandler with respect to personnel, equipment, software, and data available for analysis. Phoenix also reported having greater ability to share information than any other agency studied, due to its many formal data-sharing arrangements such as COPLINK, PACE, VICAP, NIBRS, and Crystal.

Interview data suggested that both Phoenix and Chandler had data that were at least as valid and reliable as that of the West Valley agencies, but we found that it takes substantially longer for information to become available in Phoenix than at any other agency interviewed for this project. The comparison agencies' analysts cited the same concerns as the West Valley analysts with respect to needing additional *modus operandi* (MO) data to help identify crime series. Both Phoenix and Chandler crime analysts stated that they would like to be able to share person data with other agencies across the Valley, particularly for those persons previously involved in the criminal justice system. Phoenix also reported a need for information related to calls for service, field interviews, citations, and persons and places involved in incidents.

Major Findings: Crime Analysts

- Six of the ten agencies had a crime analyst.
- Most crime analysts had access only to data obtained through their CAD/RMS systems.
- Crime analysts most often used Microsoft Access and Excel for analytic purposes.
- All analysts but one had access to their city's GIS department.
- All analysts but one used or had access to ESRI products.
- Crime analysts generally believed that their CAD/RMS data were reliable and valid.
- The most commonly cited problem data were related to *modus operandi* (MO); the next most commonly cited problem was officers failing to correct erroneous dispatch data.
- A clear relationship existed between the size of an agency and the period of time within which data were entered into the department's information systems, with smaller departments being faster than larger agencies.
- West Valley crime analysts shared information *ad hoc*.
- All crime analysts stated that person data were the most needed, followed by MO and address-level data.

Section VI: Records Management and Communication Supervisors

Information Infrastructure

An underlying premise of the West Valley Information Sharing Enterprise (WISE) is that the data-sharing framework must be able to use data provided by each city's current Records Management System (RMS) and Computer Aided Dispatch (CAD) systems. We found that each agency involved uses a computer-based RMS; eight of the ten agencies have a CAD system. However, as stated in the Scope of Work, agencies have acquired different proprietary systems or have developed them in-house. Table 4 lists the types of systems currently in use by each of the study agencies.

Table 4: Information Infrastructures for West Valley Agencies

Agency	CAD	RMS	Operating System
AVONDALE	Spillman ¹	Spillman ¹	Unix
BUCKEYE	Spillman ¹	Spillman ¹	Unix
EL MIRAGE	CISCO ² CAD	CISCO ² CAPS	Windows
GLENDALE	CHIPS ³ (In-House)	CHIPS ³ (In-House)	Oracle
GOODYEAR	NWS ⁴ , Aegis CAD	NWS ⁴ , Aegis RMS	Windows
PEORIA	Sungard H.T.E.	Sungard H.T.E.	CR Series AS 400
SURPRISE	Spillman ¹	Spillman ¹	AIX
TOLLESON	Spillman ¹	Spillman ¹	Unix ⁷
WICKENBURG	None ⁵	LEADS	DOS
YOUNGTOWN	None ⁶	Xpediter	Windows

¹ Spillman offers a multi-platform application that runs on Microsoft Windows[®], HP UX[®], AIX[®], and Sun Solaris[™] operating systems.

² CISCO – Creative Information Systems Company.

³ CHIPS – Computer Handled incident Reporting System.

⁴ NWS – New World Systems.

⁵ Wickenburg relies on hand-written tallies.

⁶ Youngtown relies on El Mirage for call dispatch.

⁷ Tolleson relies on Buckeye's server.

Records management representatives from Surprise, Avondale, and Tolleson indicated that their agencies relied on software products from Spillman Corporation for managing their CAD/RMS systems. The Peoria Police Department relies on an HTE software package from SunGard Corporation. Goodyear Police Department uses a New World System software, a Windows-based product that they said was similar to Spillman's.

Finally, El Mirage relies on software developed by Creative Information Systems (CISCO) for their integrated CAD/RMS, another Windows-based product.

The Glendale Police Department is the only agency that developed its own software to manage CAD and RMS. Its RMS is called CHIPS (Computer Handled Incident Program System); the CAD system is simply referred to as "CAD." Both were developed by the city's IT section in 1985.

CAD/RMS systems for all of the interviewed agencies were supported by city information technology (IT) departments, with the exceptions of the Goodyear Police Department, where CAD/RMS is managed by the city telecommunications department, and Surprise, where the police department manages CAD/RMS and the city's IT and telecommunications department provides network support.

The four agencies that relied on the Spillman software gave it mixed reviews. Smaller agencies appreciated its ease-of-use and customer support. All agencies were looking forward to being able to share and query the databases of other Spillman-based agencies to obtain information about people, vehicles, property, warrants, and incidents, but some concerns were expressed about the limits of the canned reports and the scalability of the software to meet the anticipated rapid population growth. However, each agency had recently acquired the software and none was planning to change.

Likewise, Goodyear had acquired the New World Systems software 2 years ago and is in the process of bringing it fully online. El Mirage stated that they were planning to upgrade their CISCO system during the next fiscal year to include a GUI interface on laptops in the field. Both Goodyear and El Mirage managers stated that a key feature of their systems was the integration of the statewide CJIS system with the software interface delivered in the cars. Goodyear has this capacity currently, and El Mirage is working toward it.

Glendale IT staff stated that within the next 5 years, they would be exploring options for a new CAD and RMS system since support for the Oracle product was ending. Peoria IT staff stated that although they anticipated a change from their HTE system, this would not occur for some time. Peoria interviewees said that the AS400's reliability was a key reason for keeping the HTE system for the next few years, while the city absorbs other extensive IT changes.

Youngtown and Wickenburg both expressed the desire to upgrade RMS systems, but noted that financial constraints and lack of IT support were preventing them from exploring options at present. In summary, as anticipated, any data-sharing effort would rely on these existing data infrastructures to share the "strands of similar data."

Data Integrity

As the Scope of Work states, vast amounts of data are collected by law enforcement agencies. Police gather data on people, places, and vehicles, among other things, in just

about every contact they make within the community. The question is: How timely, complete, and comprehensive are these data -- how good are they? To answer this question, we asked records management supervisors and communications supervisors a series of questions about who enters data, and their timeliness and accuracy.

We learned that data collection, timeliness, and integrity vary considerably across the West Valley agencies. Table 5 provides an overview of how incident reports are processed. We learned that in three jurisdictions, officers complete their reports using laptops or MDTs in their cars, while officers in three other jurisdictions complete their reports using computers located at their stations or substations. In five of the agencies, officers may hand-write reports, after which records or administrative staff will enter the information into databases. In one agency, Glendale, officers may dictate their reports for system entry by records staff.

Table 5: Data and Report Entry by Department¹

Agency	Where Incident Report Entered by Officers	Report Entry	Entry Backlog
AVONDALE	Laptop in Car	Officer	None
BUCKEYE	At Station; Handwritten	Officer; Civilian in Records Division	Up to a week
EL MIRAGE	At Station	Officer	Up to a week
GLENDALE	Handwritten; Dictated	Civilian in Records Division	Up to 3 weeks
GOODYEAR	Laptop in Car	Officer	None
PEORIA	30-50% Handwritten; 50-80% Laptop in Car	Civilian in Records Division	Up to 2 months
SURPRISE	Laptop in Car	Officer	None
TOLLESON	Handwritten; Typed Narratives	Administrative Civilian	None
WICKENBURG	Handwritten	Administrative Civilian	None
YOUNGTOWN	At Station	Administrative Civilian	None

¹ Tabular data represent primary methods for data entry reported by an agency.

Most indicated that data entry was fairly timely, and they made references to policies that required reports to be entered into their department's information systems within a brief period. As with the crime analysts, the records managers' results showed a clear relationship between agency size and the length of time it took to enter data into the information systems.

We explored how compatible, comprehensive, and accurate the data were when entered. Most agencies felt that data collected through their CAD and RMS systems ranged from

fairly accurate to quite accurate. All of the communication staff were confident about the accuracy of their CAD data because certain fields were automatically populated with system data on times, phone numbers, and addresses from the Maricopa 911 geo-coded data files. Most felt their agencies' officers were aware of the importance of calling in the information during incidents to provide accurate response-time data.

We found that their confidence in RMS data was somewhat related to who entered the data and how many different people were involved. In three of the smaller agencies, a single person was responsible for most data entry, reducing the likelihood of interpretation errors or miscoding. These agencies expressed the highest levels of confidence in their data. One of the agencies made it a policy that officers would not enter data. Staff stated, "The minute that they [officers] start trying to enter data, then their functionality becomes that of a data entry person and not a sworn police officer that should be out in the community, visible and patrolling." Agencies with officers responsible for data entry reported that they relied on edit checks built into the reporting systems along with supervisory oversight to ensure accurate data; however, these agencies also engaged in systematic data cleaning efforts, especially for older data.

Records staff indicated that entering data from forms was not difficult for them. Problems with data entry when officers used the Spillman system were attributed to lack of training and/or of comprehensive system edit checks. The systems, although flexible, allowed officers to incorrectly enter key data, for example, actual incident location. This failure, noted by records staff in two departments, complicated the extraction and aggregation of data. One agency reported significant problems with its data, stating that it was engaged in a major data cleaning and retraining effort. The smaller communities noted system difficulties with their RMSs. In Youngtown, if more than two individuals attempted simultaneously to access the RMS, the system would lock up and crash. In Wickenburg, the system often crashed, even though only one person used it.

All agencies reported that they maintained written data entry policies and procedures to guide reporting. In most cases, the policies were recorded as sections within the standard operating procedures. Interviewees most often indicated that their policy manuals were lengthy, filling multiple notebooks or stored electronically on CDs. In some cases, interviewees indicated that their policies were general in nature; others said their records policies were quite detailed, to the extent of specifying all capital letters for report fields, how apartments are coded, and how address fields were to be written. Records and communication staff indicated that policies and procedures were regularly updated and updates were often distributed by e-mail.

With respect to forms, the interviewees said the booking or arrest form is standardized for the entire county. However, each agency has its own incident reporting form. As a result, sharing incident and field interview data is complicated; the forms lack any kind of standardization. One interviewee stated that "the state of Arizona is coordinating some initiative to standardize forms across the entire state, but it is not clear that the initiative is succeeding, as every agency is somewhat wedded to their own forms."

Sharing Information with the Other Departments

Records and communication staff indicated that they shared information with other departments as requests were received. When a request was received from another law enforcement agency, the records clerk would verify identity by requesting a badge or ORI number, and checking the e-mail address or fax number from the requesting person. When the identity of the requestor was confirmed, the clerk would either mail or fax the report or prepare it for pickup by the requesting officer. No West Valley agency reported sharing information electronically; they did not have e-mail encryption available. (Glendale reported having access to the PACE system to obtain information from Phoenix. Peoria is currently in the process of joining COPLINK to obtain access to Phoenix data.)

Sharing Information with the Public

Records divisions respond to citizen and business requests for information. We asked each department about the types of information requested by and provided to the public. To gain a better understanding of the potential for efficiency gains from an integrated system, we inquired about the methods used to receive and address public requests. We found that most West Valley departments continued to receive requests for information through in-person visits, phone contacts, and the mail.

Records staff in every department perceived an increase in requests for information from the public, as would be expected given the rapid population increases in many of their communities. Interviewees reported that requests were typically insurance-related, such as accident reports and theft reports. In addition, a resident sometimes will ask for information about neighborhood crime or a problem neighbor. One community reported that its department actively participates in community meetings and receives requests about specific community crime reports.

Records staff also provide information for media representatives from newspapers, television, and radio stations. Finally, records staff field requests for reports and 911 transcripts from defense attorneys and prosecutors. Glendale reported that it receives as many as 600 requests for 911 tapes per year; Peoria noted a slight increase in the number of requests for 911 tapes over the past few months.

We asked whether the agencies used Web sites to inform the public and to receive information. Most of the agencies reported having at least basic Web sites. Avondale and Glendale were in the process of planning or enhancing their sites to include more interactive features. We visited their Web sites, and table 6 describes their features.

Table 6: Web Sites of the West Valley Police Agencies

Agency	Types of Information	Format of Crime Information	Online Reporting
AVONDALE	Static Pages - Descriptions	Monthly Crime Reports in PDF	No ¹
	Web site: www.avondale.org/index.asp?NID=78		
BUCKEYE	Static Pages - Descriptions	None	No
	Web site: www.buckeyeaz.gov/police/index.htm		
EL MIRAGE	Static Pages - Descriptions	Periodic Crime statistics, information about police forms and report requests.	No
	Web site: www.cityofelmiragepolice.org (*temporarily not available)		
GLENDALE	Interactive Pages - Police Forms, Reports and Hotlines	Interactive Crime Grid Map that creates table "Crimes" in selected grid area; PDF Performance Reports; UCR Reports listed but not available	Yes ²
	Web site: www.ci.glendale.az.us/police/		
GOODYEAR	Static Pages - Descriptions	None	No
	Web site: www.goodyearaz.gov/index.asp?ND=59		
PEORIA	Static Pages - Crime Analysis Section	Static Tables for Part 1 through 2005; Interactive Calls for service Beat Map 2005 data; Up-to-date Burglary Report (PDF)	No
	Web site: www.peoriaaz.com/index1.htm		
SURPRISE	Static Pages - Descriptions	None	No
	Web site: www.surpriseaz.com/index.asp?NIJ=22		
TOLLESON	Static Pages - Descriptions	UCR Reports, Quarterly 2004	No
	Web site: www.tollesonaz.org/index.asp?NID=15		
WICKENBURG	Static Pages - Descriptions	Table 1995-2003	No ¹
	Web site: www.ci.wickenburg.az.us/index.asp?NID=73		
YOUNGTOWN	None	None	No
	Web site: None		

1 Printable report request form in PDF format.

2 Online forms also available for reporting incidents, tips, commendations, and complaints.

The Glendale Police Department's Web site was the most advanced, with an interactive crime grid map. When a grid was selected, the site generated a table of crimes that had occurred within the specified period in the selected area. The site also had online reporting forms for citizens to:

- File an online crime report for theft, vandalism, criminal damage, and/or lost property;
- Request traffic enforcement;
- Report Glendale Arena traffic complaints;
- Provide narcotics tips;
- File a bias or hate crime report;
- Commend police personnel; and
- File a citizen's complaint.

The site provided downloadable PDF files for citizens to make public records requests and to apply to the police citizen academy. Avondale and Wickenburg also provided downloadable forms on their Web sites for requesting public records.

During our interviews, we learned that West Valley agencies viewed Web sites as a valuable resource for interacting with the community. Many of them expressed interest in using the Internet to communicate more information to the community. Three records and communication staff expressed interest in allowing the public to request and report information using their Web sites. However, no department said that improving its Web site would be a priority in the next 5 years. Only two agencies mentioned developing a Web-based data warehouse as a viable option to support sharing of West Valley data. In fact, one agency expressed serious reservations about posting or sharing data across the Web, citing security and citizen-privacy concerns.

Section VII: Homeland Security Officials

We interviewed command staff who had responsibility for homeland security issues within their jurisdictions. In four of five agencies, a supervisor or commander was in charge of homeland security issues, among other responsibilities, within his or her agency. In one agency, Glendale, a commander served as Director of Homeland Security and was the agency's liaison with ACTIC and other agencies.

We asked these homeland security officials to provide their views on data and information sharing. All indicated that they had shared data at one time or another with appropriate state and federal agencies (ACTIC and JTTF) when they were asked, particularly information regarding critical infrastructures. But they also acknowledged that no existing system allows data exchanges to and from their agencies to ACTIC or JTTF. One commander indicated that he received e-mail and bulletins from ACTIC, but that was the extent of their information sharing.

In the West Valley, these officials thought that their jurisdictions were less likely than Phoenix to be targets of terrorism, although they acknowledged that there were potential targets in their cities. For example, a nuclear power plant, air force base, and sporting arenas all are potential sites for terrorist activity. For the most part, however, they believed that they were not at the core of danger. According to one commander,

...where I see [my agency] and the rest of the West Valley agencies are, if something's going to happen, my guess is it will probably happen in Phoenix. Now, peripherally, it will shut down, and we will have to assist even Phoenix if there was some massive event. We would have things like gas shortages, lines, food availability. It would affect all of us in that manner, so none of us will say, "Well, that's in Phoenix, and we're not going to be affected." Because I believe that it will.

The problem, they said, was that information regarding these types of threats is not shared and "that information is secured and hasn't been shared, and it needs to be placed somewhere where people can get access to that in law enforcement."

In Glendale, a new stadium, currently under construction for the Arizona Cardinals, will be the site of the 2008 Super Bowl. As a result, there is more concern for terrorism than before. The commander in Glendale said,

I would suspect that we would want some way of sharing, allowing those users (ACTIC and JTTF) to access our data for the analysis and predicting issues. I think that's the goal, is to somehow design a system for the people that need the information, but exclude the people that really don't need it, that they don't get it. That's the trick. From the homeland security perspective, in prevention and protection portions of homeland security, I would imagine that our agency is going to have an intelligence bureau and they will have a special operations center. Those folks will probably receive their data at the new emergency

operations center, so I think my perspective is more of where the data goes as opposed to what types of data it is and those kinds of things.

One commander indicated that he and others obtain and share information at a quarterly West Valley tactical commanders meeting.

Commanders mentioned that training has occurred within and among jurisdictions, although not on a regular basis. One commander said that a WMD exercise was recently conducted; they take these seriously.

Homeland Security in Phoenix

The commander in charge of homeland security in the Phoenix Police Department indicated that 30 personnel were assigned to the Homeland Defense Bureau that includes state and local personnel. The Phoenix personnel included supervisors, detectives, and analysts. Within the Homeland Defense Bureau are two groups: state and local, and the Joint Terrorism Task Force. Each group demands top secret or secret clearance levels.

The commander indicated that files and information are governed by the Code of Federal Regulations 28 (CFR28) that limits sharing of confidential information. He asked, "We have a problem with when we gather intelligence and we have the joint terrorism task force guys on the top-secret side getting stuff, how do you take it from there and turn it into a criminal case on the other side?"

Sharing information is limited because of security clearances and CFR 28. The commander noted, "We are working through some of those issues... we've had a couple of successful cases we've done lately."

He also indicated that:

...this center has every database in the world up there, and a lot of stuff I don't even know about that is up there, but it's still picking up a phone that works best. We had to invent a program called the Terrorism Liaison Officer Program that involves fire fighters and police officers in jurisdictions all around the valley and the state that can tie directly into the intel center information center. So, that means they can call up there and get anything they want if they have the proper clearance.

Major Findings: Homeland Security

- No system currently exists that allows for data exchanges between West Valley police agencies and the Arizona Homeland Security Bureau.
- Information on homeland security issues has been shared by commanders with the state, but sparingly.

- West Valley commanders acknowledge that they are on the periphery of terrorism; they anticipate that Phoenix would be more likely than their jurisdictions to be a target.
- Training has been provided to officers on WMD events, but not on a continuing basis.
- Phoenix has more manpower dedicated to homeland security than the 10 West Valley departments combined.

Section VIII: Command Personnel Findings

Perceptions of Data Quality

Most of the chiefs believed that their CAD/RMS data were valid and reliable. They explained that their systems were stable and that most of the data were “good.” We asked about their perceptions of problems associated with their CAD/RMS data. Four of the chiefs explained that there were inconsistencies with the coding of offense data. Many of them noted, for example, that a citizen might call the police about a burglary, when in fact, after an officer investigates the incident, he or she determines that it was actually a theft. The chiefs reported that in these cases, officers often do not call to correct the error with dispatch, and so the offense codes remain incorrect in the CAD/RMS system. Two of the chiefs stated that problems with their CAD/RMS systems were restricted to address data. They explained that although some officers do not collect information systematically, others do not collect the data at all. For instance, some might record address-level data by documenting intersections, while others use full addresses, and still others might use only business names. They explained that the lack of consistency of address-level data makes it difficult to analyze such information accurately.

The chief in El Mirage indicated that his agency’s CAD/RMS system was antiquated. He stated that it was primarily used for report writing and report generation, and that it was unreliable for any other use. Youngtown reported that it did not have its own CAD/RMS system; the agency out-sources this responsibility to El Mirage. The Youngtown chief reported that that agency receives regular downloads of CAD/RMS data from El Mirage; they use this information for compiling statistics to make presentations to city officials and to make personnel-allocation decisions. Buckeye’s chief reported that his CAD/RMS system was underdeveloped and that the agency is working with a vendor to train personnel to use the system, so that they can better use this information in the future.

Commanders in the West Valley agencies shared the sentiments of their police chiefs about data quality. Most believed that their data were valid and reliable. With respect to data systems, the supervisor in Wickenburg indicated that they did not have CAD or RMS; instead, they rely on handwritten cards for dispatching calls for service, and a civilian enters reports into an antiquated database.

Information Use and Availability

We asked all of the police chiefs about the kinds of information and data that they used for decision-making. The most common response was CAD/RMS data, followed closely by data obtained directly from crime reports or logs. This information was used by the chiefs for several operational and administrative purposes. The most common purposes were to notify their commanders about crime problems needing their attention and to make decisions about personnel allocations to geographic areas with high levels of crime. Chiefs in Goodyear and Tolleson also indicated that they used traffic data for this purpose.

However, interviews with the chiefs indicated that they primarily used departmental data to make administrative decisions rather than for decisions directly related to operations. Almost all of the chiefs stated that they used CAD/RMS data to justify resources and to guide requests for additional personnel and equipment. Two chiefs stated that they used CAD data for tracking and evaluating officer activity and productivity; two others mentioned that they used complaint and internal affairs data for personnel decisions. Likewise, two of the chiefs stated that they spent the majority of their time on personnel issues, so they relied heavily on “all data” pertaining to the evaluation of personnel. Buckeye’s chief stated that due to a lack of data infrastructure, that agency was required to rely heavily on person-to-person or person-to-group conversations to make operational and administrative decisions.⁷

We asked the chiefs about the types of information that they most often used from their information systems. All of the West Valley chiefs stated that they primarily relied on event data obtained through crime reports or their CAD/RMS systems. For example, almost all of the chiefs stated that such data were used for the purpose of designing place-based intervention strategies, such as increasing patrols in known hot spots. They explained that they also used this information to identify series patterns for crimes such as burglaries, robberies, and auto thefts. If a pattern was identified, the information was then used to direct special units or patrols to address the problem.

Commanders use departmental data for allocating personnel and targeting areas of criminal behavior. In Avondale, for example, commanders indicated that they used maps and calls for service data to target hot spots and to construct the new beat system.

Two of the chiefs stated that they also relied heavily on census data for allocating resources. For example, one chief explained that analysis of census data showed that some areas of the city were heavily populated with Spanish speakers; he re-allocated his Spanish-speaking officers to these areas, increasing the effectiveness of police services. Two other chiefs stated that they relied heavily on accident data to determine where traffic operations should be deployed.

Of special interest was the finding that half of the chiefs reported that their agencies did not have the infrastructure or capacity to map crime within their jurisdictions. These agencies tended to be smaller and did not have the financial resources to staff or equip this function. However, three of the chiefs reported that their agencies were actively involved in crime mapping, and one was in the process of implementing crime mapping within the next few months. All three of these agencies used crime mapping for tactical and operational purposes. For example, these chiefs stated that crime mapping was routinely conducted to identify location-specific crime trends. If a trend or hot spot was observed, they used this information to make managers aware of the problem and to

⁷ During interviews with the chiefs, it became clear that they relied on several sources of information for making decisions. All of the chiefs understood that the purpose of this interview was to assess their data needs with respect to crime and related problems. Thus, although many of the chiefs did not make mention of the vast array of information that they use for decision-making, the omission of such discussion does not indicate that they do not use other information.

ensure that appropriate resources were being deployed. One of the chiefs used crime maps for organizational decisions, as well. This chief used crime mapping to determine beat assignments and make budget presentations to the city council. He also reported that his agency provided crime maps to citizens to assist them with personal decisions and with crime prevention efforts by block watch programs.

Information Needs

We asked West Valley chiefs about the types of information they needed from other jurisdictions. Five of the chiefs explained that their agencies needed information from other jurisdictions about people who had had prior contact with the criminal justice system. They were specifically interested in data pertaining to arrest history and field interviews, and in individual's potential for violence, previous addresses, and vehicles. A few chiefs stated that their agencies also needed information pertaining to known associates of offenders. These data, they explained, could be obtained through Field Interview cards and access to jail visitation rosters. Many of the chiefs noted that one of the reasons person data are so important is that individuals who are contacted by the police in their jurisdiction are quite often not residents of their city. Thus, field level officers are often working without much information that might help with the tactical decisions they must make in the field.

Six of the chiefs also stated that they needed modus operandi (MO) information from other agencies. They said that many crime series take place across the valley; criminal investigators tend to work these crimes independently, without the accumulated knowledge of their colleagues across the metropolitan area. An example was a series of safe burglaries occurring throughout the Valley. Only recently did investigators across departments recognize the regional trend and begin collaborating on investigating these cases. Chiefs also voiced a variety of data needs from other jurisdiction, including information pertaining to gangs, vehicles, property, and census data.

Commanders agreed with the chiefs that they needed information on arrest histories and crime series. The Buckeye commander said, "It would be nice just to get on the computer without calling around and just... and it just pops up – yeah, we had contact with him for this or whatever. I just think that the ease and the availability of information on different people will be just great."

Homeland Security Information Sharing

We asked West Valley chiefs about the extent to which they currently share information related to homeland security and about their agencies' homeland security information needs. Our interviews suggested that sharing information related to homeland security was restricted to agency participation in the Arizona Counter-Terrorism Information Center (ACTIC). Four chiefs stated that their agencies participated in ACTIC, either directly or indirectly, for the specific purpose of sharing information about threats related to homeland security. Two of the chiefs (Glendale, Peoria) indicated that they had allocated permanent personnel to ACTIC; two stated that their agencies did not have their

own personnel assigned to ACTIC, but they relied on a representative from another agency. For example, Youngtown relied on an ACTIC representative from the Peoria Police Department and El Mirage relied on a representative from the Maricopa County Sheriff's Office to retrieve and provide this information the agency. Three chiefs gave specific examples of the types of information that they share with ACTIC. Two stated that they had contacted ACTIC about stolen police uniforms and badges, providing the information to their ACTIC representatives, who in turn provided it to ACTIC. Another chief explained that some of his officers had observed two individuals photographing airplanes at the local airport with sophisticated equipment. The officers obtained identifying information on the persons and forwarded it to ACTIC.

All of the chiefs agreed that their agencies needed information pertaining to homeland security threats. Four chiefs stated that they needed information pertaining to persons and groups that have potential to engage in crime or terrorism within their local jurisdictions, giving as examples gangs, gang members, immigrants, and potential terrorists. These chiefs were clear that although most of the information forwarded by federal agencies was interesting, they did not want or need generic information about potential threats, but rather needed specific information on persons of interest or potential locations that might be threatened within their communities. Two chiefs pointed out that critical infrastructures were located either within their jurisdictions or nearby. These chiefs stated that the proximity to critical infrastructures causes them to need information about crime in the areas surrounding that infrastructure and intelligence on threats to it. Three of the chiefs also stated a need for general information pertaining to trends, potential threats, and critical infrastructures within their jurisdictions.

Perceived Challenges to Regional Data Sharing

Near the conclusion of the interview, we asked the chiefs about obstacles they saw in regional data sharing. Five of the chiefs believed that the cost of implementing an information-sharing system could be a deterrent to some agencies. They noted that many of the agencies in the West Valley are small and do not have adequate resources (personnel and money) to invest in such a major undertaking. Other chiefs pointed out that some West Valley police agencies have already committed to costly information systems, so they might not want to spend additional monies on yet another one.

Five chiefs believed that there might be administrative problems with the development of a regional data-sharing initiative. These chiefs stated that many issues will need to be discussed before such an initiative could begin, and that friction between the agencies could stall such a project. For example, they cited a need for dialogue about issues connected with data management, data security, data ownership, data quality control, system maintenance, training requirements, and memoranda of understanding, any of which, if not handled delicately, could derail the project. About one third of the chiefs mentioned that for the initiative to succeed, agencies would need to move forward while recognizing the delicacy of relationships, understanding that trust and strong relationships would be central to the project's success. A few of the chiefs also mentioned that some

information technology personnel, as well as some police managers, are territorial with respect to their data and may be reluctant to share information.

Three commanders indicated that turf battles among some agencies might hinder the ability to share information, but they also said that the smaller departments recognize the need to share because they lack resources to deal independently with information-related problems. One commander mentioned that some people “think their information is top secret and they are not willing to share.” The same commander also said that “the large agencies were the ‘worst’ in terms of providing information...that it’s really, really, really difficult.”

A commander in Glendale said that one of the barriers to data sharing is that lack of standardized terminology. He mentioned that definitions vary across departments for different data elements. He said that “it’s hard to move the data if we don’t have a common name for something.”

We asked the chiefs where within their own agencies they might have problems with the implementation of a data-sharing initiative. Without exception, chiefs indicated that this would not be an issue, and that as far as they were concerned, there would be no problems with the implementation of the West Valley data-sharing initiative. Almost all of the responses were similar to the following: “Absolutely not. We would welcome it. We want to be able to query other agencies reports. Our patrol guys need it the most. It is good for officer safety and crime fighting.” Another chief similarly stated, “None. My department is ready and waiting, and we want to move forward.” All of the chiefs expressed the desire to participate in the initiative and stated that they would work to resolve problems as they arose. They all emphasized that it is imperative that the data initiative move forward and that they would strongly support it in any way that they could.

Major Findings: Command Personnel

- Most of the chiefs and commanders believe that their CAD/RMS data is valid and reliable. However, four of the chiefs explained that there were inconsistencies with the coding of offense data.
- The most common type of data the chiefs and commanders rely on to make decisions is CAD/RMS data, followed closely by data obtained directly from crime reports or logs.
- Interviews with the chiefs indicated that they use departmental data and information primarily for the purpose of making administrative decisions rather than for making decisions related to operations.
- Half of the chiefs indicated that their agencies did not have the infrastructure or capacity to map crime within their jurisdictions.
- Chiefs stated that they most needed modus operandi (MO) information from other agencies, followed closely by information on people who had had prior contact with the criminal justice system.

- Commanders need arrest histories and information on crime series in the West Valley.
- Half of the chiefs believe that the cost of implementing an information-sharing system could be a deterrent.
- Half believe that there might be administrative or management problems with the development of a regional data-sharing initiative that could cause problems with project implementation.
- Some commanders believe that turf battles could hinder data sharing.
- All of the chiefs stated that it is imperative that the data initiative move forward and that they would strongly support it in any way that they could.

Section IX: Web Sites

We reviewed 47 Arizona agency Web sites that were identified on the Arizona Department of Public Safety's Web site (www.azdps.gov/information/default.asp), 69 Web site applications that were listed as potential solutions in the needs assessment Scope of Work, and 27 information-sharing projects profiled on the Web site for Search, Inc. (www.search.org/programs/info/resources.asp).

Of the 47 Arizona agency sites (listed in Appendix B: Reviewed Web Sites – Arizona):

- 74% were primarily static information or brochure-like Web sites.
- 51% provided data on crime statistics, although several had data that was at least a year old.
- 15% provided crime maps, four of which were interactive and dynamic.
- 21% provided access to an online form of some type. Some of these were downloadable PDF forms to complete and submit by mail or in person; others could be completed online and submitted electronically.

Two sites were notable and should be considered for the WISE effort. One provides data for multiple locations in a dynamic (data-driven) manner. The Tempe Web site provided a link to another site, www.azcentral.com, where users can search for crimes reported in the Phoenix area by city and zip code. This media-based site provides pinmaps for Chandler, Gilbert, Glendale, Mesa, Peoria, Phoenix, and Tempe. Users can limit the search to a time period: the prior month, 3 months, 6 months, or year. The pins on the maps identify incidents as violent, property, or “other” crimes, and indicate the block of the incident. Users can also list the data shown on the map.

A second site, the Chandler Police Department Web site, allows the public to obtain police records online. In our interview with the Chandler records staff, we learned that Chandler has outsourced this service to a private company. The company provides redaction of information services and a way for members of the public to receive copies of their police reports online, freeing police personnel time.

A review of the other 69 Web site applications (see Appendix B: Reviewed Web Sites – National) yielded that:

- 23% of the Web sites have interactive, dynamic geographic information applications.
- 9% have data on calls for service.
- 57% have data on reported crimes.
- 10% have data on persons of interest.

The Web sites most relevant to this effort were those that supported interagency sharing. The Automated Regional Justice Information System (ARJIS at www.arjis.org) is “a complex criminal justice enterprise network utilized by 50 local, state and federal agencies in the San Diego region.” According to information on the site, it includes a

secure intranet that “contains data on the region’s crime cases, arrests, citations, field interviews, traffic accidents, fraudulent documents, photographs, gang information and stolen property.” It provides a “single point of entry to query all regional justice data” and is used for tactical analysis, investigations, statistical research, and crime analysis. From a public view, it allows for the dynamic generation of maps and lists about crime problems for 18 cities and San Diego County, as well as for numerous neighborhoods, police beats, council districts, and other geographic areas. The East Valley Compass project at www.citizencompass.org/compass/, involving 10 California East Valley cities, is similar that of ARJIS.

From the Search, Inc. section on local profiles, we learned that many communities are engaged in strategic planning to develop interagency criminal justice systems. However, many of these efforts are focused on sharing information across the system among police, prosecutors, courts, and corrections, rather than among police agencies. Of particular interest to the West Valley effort is the Maricopa County Integrated Criminal Justice Information System (ICJIS). Its purpose is to facilitate the integration of information systems among the criminal justice agencies of Maricopa County. It is led by a coalition of five primary criminal justice agencies within Maricopa County: the Sheriff’s Office, the prosecutor (County Attorney), indigent representation agencies (Public Defender, Legal Defender, Office of Legal Advocate, and Office of Contract Counsel), the Clerk of the Court, and the court system (Superior Court, Adult Probation, Juvenile Probation, Justice Courts, and Pretrial Services). A bi-annual strategic business plan was approved by participants in April 2005.

Other ongoing efforts similar to the West Valley project were the Texas Urban Counties Common Integrated Justice System and the Shield plan. The Texas effort involves 13 urban counties and is focused on cost reduction and standardized work products. As of 2003, they were in the process of selecting a vendor to build the system. The Shield project involved three metropolitan areas: New York City, the National Capitol Area (the District of Columbia, Maryland, and Virginia), and Pennsylvania. It sought to demonstrate real-time sharing of public safety, law enforcement, and justice information across jurisdictions to help protect our nation against terrorist attacks and to enhance law enforcement nationwide. As of September 2003, this effort was seeking to link the partners’ existing local data-sharing networks into a multi-jurisdictional network across a secure Internet connection.

In summary, our review of Web sites found that the criminal justice field is just beginning to embrace Web-based technologies. Few models for creating a cross-jurisdictional data warehouse exist. The West Valley partners are poised to be one of the first groups to create a model for effectively sharing information.

Section X: Conclusions

This needs assessment has four major objectives:

1. Define the current technological environment within the West Valley.
2. Define how technology is used or consumed within the West Valley.
3. Identify current and future data-sharing needs of police agencies.
4. Determine whether there are any obstacles to regional information sharing within the West Valley.

To accomplish these objectives, we conducted extensive interviews with nearly 240 members of the 10 West Valley, Phoenix, and Chandler police departments. We also examined population forecasts, socio-demographic information, and crime data associated with each of these agencies. We reviewed the Web sites of 47 Arizona police agencies, 65 Web-based information-sharing projects from across the country, and 27 other state and local information-sharing projects identified by Search, Inc. From this information we learned the following.

Existing Technological Infrastructure

- Technological resources are severely limited in some agencies, but in others, potential for growth mirrors future population increases.
- Technology (hardware and software) for information sharing varies in sophistication within the West Valley. Wickenburg, for example, has no CAD, RMS or MDCs in patrol cars. At the other end of the spectrum is Glendale which has CAD, RMS, MDCs, GIS, an interactive Web site, and a crime analyst.
- Some West Valley agencies are or will be able to share information through their current systems. For example, El Mirage currently supports Youngtown through its CAD system. Four agencies, Avondale, Buckeye, Surprise, and Tolleson, are on the cusp of sharing information because all use the Spillman system. Glendale is able to obtain information from Phoenix through PACE, and Peoria will soon be able to share information with Phoenix through COPLINK.
- Eight of the 10 West Valley agencies have recently acquired or updated their CAD/RMS systems. Many are still in the process of converting data and bringing the systems to full operational capacity. Glendale plans to upgrade its CAD/RMS over the next 5 years.
- No police department in the West Valley has an existing system readily capable of collecting, evaluating, analyzing, and distributing information and knowledge in an efficient and user-friendly manner to all of the involved agencies.

Identified Technology Needs

- Patrol officers in El Mirage, Youngtown, and presumably Wickenburg expressed a need for MDCs in their cars.
- Investigators expressed a need for MDCs in their vehicles throughout the West Valley.
- Youngtown and Wickenburg sought basic technology (e.g., CAD, RMS) for their agencies.

- Half of the chiefs and commanders sought mapping capabilities for their agencies.

Identified Data Needs

- Patrol officers and investigators want direct access to data about persons, including an individual's prior contact with police, criminal history, Field Interview cards, photograph, aliases, associates, addresses, and outstanding warrants.
- Patrol officers want access to Attempt to Locate suspect and vehicle information, and knowledge about ongoing investigations.
- Investigators want information derived from Field Interview cards, access to crime trend data from neighboring jurisdictions, and access to internal and interagency RMS data in the field.
- Patrol officers and investigators both sought additional information from crime analysts including mapping, crime trends, hot spots, and predictive information.
- Chiefs and commanders supported their officers' requests for modus operandi information and person data.
- Crime analysts indicated that person data, modus operandi information, and address-level data were most needed.

Obstacles to Regional Information Sharing

- MO data was found to be unreliable and not valid in most of the study agencies.
- At least half of the agencies do not have the capacity to engage in place-based (address-level) analysis.
- The cost of implementing an information-sharing system could be a deterrent for some agencies to participate fully in WISE.
- Administrative and management problems with the development of a regional data-sharing initiative could cause difficulties with project implementation.
- Issues of data management, data security, data ownership, quality control, system maintenance, standardization of terminology, and training requirements need to be discussed or they could derail the sharing of information.
- Turf battles among all levels of personnel could hinder data sharing.
- Some West Valley police agencies have already committed to costly information systems, so they might not want to spend additional monies on yet another information system.

Other Important Findings

- The population of the 10 West Valley jurisdictions will increase by at least 31% from 2005 (625,440) to 2010 (817,300). If prognosticators are correct, then Buckeye will triple in size and Goodyear and Surprise will see increases close to 50%.
- All of the police chiefs in the West Valley feel that it is imperative that the data initiative move forward and would strongly support it in any way that they could.

Section XI: Recommendations

The findings and conclusions of this study illustrate the diversity of the West Valley police departments with respect to technology use, data needs, size, and growth. Some agencies need more technology than others, but many of them do not have the resources to obtain it. Some agencies are confronting phenomenal growth within the next few years. How will they keep pace with a growing population and a growing department, and anticipate the information needs of their officers while working with nine other agencies? How does WISE balance the needs of the smaller agencies with those of the larger ones? How does the group determine the direction of the data-sharing effort? In addition to these issues, obstacles to regional information sharing must be short-circuited before they emerge to overwhelm the project. What are the best methods for doing this? The good news is that police chiefs in the West Valley are behind the initiative and are willing to provide support for its furtherance.

Recommendations

At the conclusion of this needs assessment, based on our findings, we recommend the following steps:

1. Create a governance structure to assure the success of the project. This should include representation and leadership from the West Valley Chiefs of Police. We recommend that the committee serve as a subcommittee for the Far West Valley Chiefs Association to provide oversight and guidance for the WISE effort.
2. The subcommittee from the West Valley Chiefs Association should select a project manager for the WISE initiative. It is recommended that this person be independent of West Valley police agencies so that he or she can offer independent and unbiased advice and direction. The project manager should be responsible for guiding the strategic planning process, identifying money to implement the WISE project, serving as liaison between the West Valley Chiefs of Police and the WISE subcommittee, and for implementing the project.
3. Create a team or subcommittee from within WISE to initiate a strategic planning process that will lead to the implementation of a West Valley-wide system and intelligence-led policing efforts. This team would develop a strategic plan, based upon the needs assessment, to bring to the WISE group for feedback and approval. As noted previously, the strategic plan should have as a primary focus the sharing of person-level data.
4. A written statement about the West Valley effort thus far to create an information-sharing initiative should be distributed to the public through local newspapers and television stations. This not only will foster legitimacy for the West Valley agencies and their chiefs, but it will convey information to other Maricopa County law enforcement agencies about the growing organizational capacity and strength of the West Valley.

5. Create an external advisory board. The board should be comprised of individuals who have played a primary role in the creation of data-sharing projects within their jurisdictions. This group will be able to provide WISE with valuable experiential advice on how to proceed and how to address obstacles.

Recommended Next Steps

- Hire a project manager who is independent of West Valley police agencies.
- Develop a preliminary strategic plan for implementing the WISE project.
 - Assign individuals from the WISE committee to a subcommittee for accomplishing this task.
- Determine the timeline for the above two action steps.

References

- Arizona Criminal Justice Commission. (2005). *Arizona Crime Trends: A System Review*. Phoenix: Arizona Criminal Justice Commission.
- Chau, M., Atabakhsh, H., Zeng, D., & Chen H. (2001, May 21-23). *Building an Infrastructure for Law Enforcement Information Sharing and Collaboration: Design Issues and Challenges*. Paper presented at the National Conference on Digital Government, Los Angeles.
- Cresswell, A. et al. (2005). *Sharing Justice Information: A Capability Assessment Toolkit*. Washington DC: Bureau of Justice Assistance.
- Harris, K. (2006). *Strategic Planning: 10 Critical Success Factors and Sure-Fire Ways to Fail!* Presented at the Symposium on Justice and Public Safety Information Sharing, Washington DC.
- Ioimo, R. (2000). *Applying the Theory of Task-Technology Fit in Assessing Police Use of Field Computing*. Unpublished doctoral dissertation, Nova University.
- MAG. (2006). *A Resource for Policy Makers in the Maricopa Region* (Maricopa Association of Governments, January 2006 Regional Report) Phoenix, Arizona.
- Peterson, M. (2005). *Intelligence-Led Policing: the New Intelligence Architecture*. Washington DC: Bureau of Justice Assistance.
- Romesburg, W. (2005). *Law Enforcement Tech Guide for Small and Rural Police Agencies*. Washington DC: U.S. Department of Justice.
- Zaworski, M. (2005). *Assessing an Automated Information Sharing Technology in the Post 9-11 Era*. Unpublished doctoral dissertation, Florida International University.

Appendix A

Interview Instruments

Patrol Instrument

1. What IT equipment do you currently have available?
2. Do you feel comfortable getting information from your system?
3. What specific information (i.e., people, places, property) can you obtain from your system?
4. What information or resources do you have available in the office that are not available in the field?
5. Is there information that you would like, but do not currently have available in the field?
6. What information do you share with other officers and detectives within your own agency?
7. What information do you want from other officers and detectives within your own agency?
8. What information do you share with other jurisdictions?
9. What information do you want from other jurisdictions?
10. What information do you want from your crime analysts?
11. Have you received any training on responding to major incidents, for example, a natural or man-made disaster? If “yes,” how much and what kind of training?
12. What information do you think would be important for you to respond to a major incident, for example, a natural or man-made disaster?
13. If you had to select just one piece of information or data, or a resource that you do not currently have available, what would you want?

Investigator Instrument

1. What IT equipment do you have available?
2. Do you feel comfortable getting information from your system?
3. What specific information (i.e., people, places, property, autos, mug shots) can you obtain from your system?
4. Is there information (i.e., people, places, property, autos, mug shots) that you would like, but do not currently have available to you in the field?
5. What information do you share with other officers and detectives in your agency?
6. What information do you want from other officers and detectives in your agency?
7. What information do you share with other jurisdictions?
8. What information do you want from other jurisdiction?
9. What information do you want from your crime analysts?
10. Do you have any unit-based databases? (What is in them, specifically?)
11. Are you willing to share these databases with other personnel in or out of your agency?
12. Have you received any training on responding to major incidents, for example, a natural or man-made disaster? If “yes,” how much and what kind of training?
13. What information do you think would be important in order for you to respond to a major incident, for example, a natural or man-made disaster?
14. If you had to select just one piece of information or data, or a resource that you do not currently have available to you, what would you want?

Crime Analyst Instrument

1. What kind of data do you use for analysis?
2. What software applications do you currently use for data sharing and/or terrorism prevention?
3. What software applications or analytical methods would be most useful for terrorism prevention?
4. Does the city have a GIS department and do you have access to it?
5. Do you use GIS? What software? Which version?
6. What data collection software do you use (CAD, RMS, others)?
7. How reliable, valid, and timely do you think your data are?
8. What piece of information is most neglected on reports?
9. What analytic software do you use (Access, GIS, Excel, other)?
10. What information (i.e., people, places, property, autos, mug shots) do you most often use from your systems?
11. Is there information (i.e., people, places, property, autos) that you would like but do not currently have available in the field?
12. What is the most applicable or useful software for sharing information across jurisdictions?
13. What information do you share with other jurisdictions?
14. What information do you want from other jurisdiction?
15. What information do you share with other officers and detectives?
16. What information do you want from other officers and detectives, and what would that be?
17. Who supports your CAD and RMS system?

CAD/RMS System Administrator Instrument

1. Who do you report to?
2. Describe your system or network and its capabilities?
3. How do you support your police agency?
4. What kind of support would you be able to provide to the West Valley data-sharing initiative?
5. How reliable, valid, and timely do you think your data are?
6. Policies and procedures to data entry and changes, query?
7. What security requirements do you have for sharing information within and across departments?
8. What big initiatives do you have going in the next 5 years?

Records and Communications Instrument

1. Show me the forms you guys enter.
2. How difficult is it for you to enter your data? What problems do you have?
3. What kind of backlog do you have?
4. How reliable, valid, and timely do you think your data is?
5. Where are your quality control checks?
6. Who do you routinely share data with?
7. Show me your policies and procedures for data entry.
8. What does the public ask for most often? How hard is it to provide to them?
9. What information do you regularly provide to the public?
10. Do you charge a fee for records to the public?
11. What is your view of allowing access to info on a Web-based system?
12. Do you think that you would save any time by providing this information on a Web-based system?
13. What information do you regularly provide to officers or other officials?

Chiefs, Senior Executive, and Homeland Security Personnel Instrument

1. What reporting mechanisms do you currently use for data sharing and/or homeland security?
2. What is your agency's crime mapping capability and how do you use it?
3. How reliable, valid, and timely do you think your CAD/RMS data is?
4. What kind of information/data do you use for decision-making?
5. What information do you need for homeland security?
6. Are there any data that you are sharing with regard to homeland security regionally, county-wide, or state-wide?
7. Where is the data that you are sharing coming from?
8. What information do you need from other jurisdictions?
9. What information (i.e., people, places, property, autos, mug shots) do you most often use from your systems?
10. Is there any other information that you would like, but do not currently have available to you?
11. What obstacles do you see in regional data sharing?
12. Where within your agency do you think you might have problems with the implementation of a data-sharing initiative?

Appendix B

Reviewed Web Sites - National

Jurisdiction	St	Web Address	Description Of Site Contents	Notable Sites	Calls for service	Reported Crimes	Persons
Mesa	AZ	http://www.ci.mesa.az.us/police/crime_analysis/maps/mesa_city_map_districts.asp	Interactive of department districts. Map is linked to beat stats from Oct-Dec '05 and residential burglary and stolen vehicle locations, all in PDF format.		√		
Scottsdale	AZ	http://eservices.scottsdaleaz.gov/cosmap/crimes/default.asp	Interactive pinmap w/ location, type, and date of crime. Up-to-date within the last 6 months.	√		√	
South Tucson	AZ	http://www.southtucsonpolice.com/GISintro.html	Out-of-date maps containing location of Part 1 offenses.			√	
Tempe	AZ	http://www.tempe.gov/cau/crime_analysis_maps.htm	Interactive map of department beats. Also contains limited (totals only) up-to-date crime data.			√	
Berkeley	CA	http://www.ci.berkeley.ca.us/police/crimestats/crimestatmap.html	Interactive Pin District map linked to limited (totals) out of date Part 1 offenses data.			√	
Corona	CA	http://www.discovercorona.com/depts/pd/crimestats.cfm	Semi-interactive with "Zone" (district) map and limited (totals) crime data in the form of a bar graph.			√	
Daly City	CA	http://www.ci.daly-city.ca.us/resident/frame.htm	Interactive pin district map linked to crime data containing address, call type, and date/time. Jan '02-Apr '05.			√	

Jurisdiction	St	Web Address	Description Of Site Contents	Notable Sites	Calls for service	Reported Crimes	Persons
Fontana	CA	http://www.fontana.org/police/crime_mapping.htm	Interactive Pin "COMPASS" map with locations of calls for service, "crime event," and "enforcement activity."	√	√	√	
Fremont	CA	http://www.fremontpolice.org/megan/megan.html	No maps. Only basic crime stat totals for '00-'05.			√	
Fresno	CA	http://www.fresno.gov/fpd/ (UPDATED URL)	PDFs with crime statistics and maps containing locations of various crime types. 2005 data.				
Huntington Beach	CA	http://www.hbpd.org/indexg2.htm	No maps. Only basic Part 1 crime totals for '01-'05.			√	
Los Angeles County	CA	http://gismap.co.la.ca.us/sols/default.htm	Interactive pinmap with sex offender releasee info including address and offense info. Also contains offender location in relation to schools.	√			√
Oakland	CA	http://www.oaklandnet.com/cw/Disclaimer.jsp (UPDATED URL)	Interactive "CRIMESTAT" map with locations of crimes.	√		√	
Ontario	CA	http://www.ci.ontario.ca.us/index.cfm/2981	No maps. Only Part 1 crime and traffic accident totals from '01-'03.				
Oxnard	CA	http://www.oxnardpd.org/CrimeCamera/crimemap.htm	Interactive Pinbeat map linked to crime data.			√	
Redding	CA	http://rpdmaps.ci.redding.ca.us/	Same site as Los Angeles County.			√	√

Jurisdiction	St	Web Address	Description Of Site Contents	Notable Sites	Calls for service	Reported Crimes	Persons
Riverside County	CA	http://216.57.210.151/riverside/jsp/index.jsp	Same site as Los Angeles County.			√	√
Sacramento	CA	http://gis.cityofsacramento.org/Web site/sacpd/	Interactive pinmap with a query builder.	√			
Salinas	CA	http://crimemap.ci.salinas.ca.us/	Not up-to-date re: stats. Latest available are 2004 Part 1, Part 2, Misc, and "burglary summary." Site says there is an Interactive Pincrime map, but the server is always busy.				
San Diego County	CA	http://www.arjis.org/mapping/help/disclaimer.html	Interactive Pinmap with locations of crimes and linked data on crime time and block address.				
San Diego County	CA	http://www.arjis.org/SDCRPinMapEntry.html	Same site as Los Angeles County.			√	√
Santa Rosa	CA	http://ci.santarosa.ca.us/pd/290pc/index.html	Linked to Megan's Law Web site (same as others). No other crime stats anywhere.			√	√
Visalia	CA	http://www.vpd.ci.visalia.ca.us/	Interactive pinmap with crime incident location linked to offense info and date. Up-to-date. Site also has Part 1 crime stats for '03-'05 and "tracking trends for COPPS" stats.	√		√	
Boulder	CO	http://www.ci.boulder.co.us/police/crime/crime_map_flash.htm	Interactive pinmap with current week's crime incident locations. Also has map of districts.	√		√	

Jurisdiction	St	Web Address	Description Of Site Contents	Notable Sites	Calls for service	Reported Crimes	Persons
Colorado Springs	CO	http://www.springsgov.com/Page.asp?NavID=348	PDF maps of burglaries (motor vehicle), burglaries, MV theft, robberies, and vandalism locations, by week since beginning of '06. Also has .asp map of meth lab seizures to date for '03-'05.			√	
Golden	CO	http://ci.golden.co.us/dept/police/crimemap/crimemaps.htm	No crime stats or crime maps. City Web site has GIS link, but no crime maps available.				
Longmont	CO	http://www.ci.longmont.co.us/police/crimeupdate/map.htm	Semi-interactive pinsite with assault, burglary, car break-ins, motor vehicle thefts, mischief/vandalism, and sexual assault incident locations. Also has Part 1 crime stat totals for '01-'05.			√	
Washington	DC	http://mpdc.dc.gov/info/districts/districts.shm	Citywide up-to-date monthly crime stats and static maps of district and defined district "hot spot areas			√	
Fort Lauderdale	FL	http://ci.ftlaud.fl.us/police/mapflpd.html	Graphic map of districts. Citywide Violent and Non-Violent Crime stats '00-'05, Part 1 crime data, arrests, and service calls; all up-to-date.		√	√	
Port St. Lucie	FL	http://www.cityofpsl.com/PSLCops/index.htm	Interactive map of districts and zones. Site also contains basic crime stats by district.			√	
Atlanta	GA	http://www.atlantapd.org/index.asp?nav=crimemaps	Interactive pinmap with basic crime incident locations and Interactive Pindistrict map linked to commander and contact info. Also has UCR report for '02-'05.	√		√	

Jurisdiction	St	Web Address	Description Of Site Contents	Notable Sites	Calls for service	Reported Crimes	Persons
Chicago	IL	http://12.17.79.6/	Interactive pinmap with crime incident location linked to crime classification. Up-to-date. Also has an Interactive pin "safe passage program map" for safe routes to schools.	√			
Illinois State Police	IL	http://samnet.isp.state.il.us/statepolice/images/samintro.htm	Detailed up-to-date sexual offender database with offender locations and offense info. UCR data from 1997-2004. No maps.			√	√
Evansville	IN	http://www.evansvillepolice.com/crime_analysis.htm	Interactive pinmap of crime incident locations linked to crime description and date/time of incident. Up-to-date.	√			
Indianapolis	IN	http://arcimsnt1.indygov.org/prod/incident/	Interactive pinmap of crime incident locations linked to description, incident address, date/time, and case #. Also has Interactive Pin "crime view community" map that seems to have similar data, but in relation to schools, etc. and is better quality.	√			
Lenexa	KS	http://65.70.140.107/Website/lenecrime/index.html#	Interactive pinmap of crime incident locations linked to date of incident. Up-to-date.				
Wichita	KS	http://www.wichitapolice.com/Thematic_Maps/stats.htm	Semi-interactive map of "reporting areas" linked to crime stat totals. Also has JPG thematic maps of various crimes.		√	√	
Lexington	KY	http://crimewatch.fucg.com/	Interactive pinmap with locations of crimes but no linked data.				

Jurisdiction	St	Web Address	Description Of Site Contents	Notable Sites	Calls for service	Reported Crimes	Persons
Jefferson Parish	LA	http://www.jpso.com/mo_ims/jpso_web/zipcode_start.htm	Interactive pinmap with locations of crime incidents linked to address, time/date. Shows surrounding schools and parks.				
New Orleans	LA	http://www.new-orleans.la.us/cno_web/nopd/maps/basecrimemap.html	Not currently available.				
Cambridge	MA	http://www.ci.cambridge.ma.us/~CPD/reports/2003/first%20quarter%20report/index.html	Semi-interactive department map linked to PDF '04 reports containing maps and other year-end info.				
Danvers	MA	http://www.danverspolice.com/analysis.htm	Contains links to other crime analysis pages such as the Crime Mapping Research Center at NIJ.				
Baltimore	MD	http://141.157.54.34/bpdmaps/	Interactive pinmap with locations of crime incidents linked to address, time/date, and crime description. Shows surrounding schools, police stations, and parks.	√		√	
Detroit	MI	http://www.ci.detroit.mi.us/police/police/compstat.htm	UCR data from '90-'04 plus some charts/graphs of stats.			√	
Lansing	MI	http://www.lansingpolice.com/	Interactive pinmap with crime incident locations.				

Jurisdiction	St	Web Address	Description Of Site Contents	Notable Sites	Calls for service	Reported Crimes	Persons
St. Louis	MO	http://64.218.68.50/stlouis/news/impd/viewer.htm	Interactive pinmap with locations of crime incidents linked to address, time/date, and crime description.			√	
Charlotte-Mecklenburg	NC	http://baffle.pfeiffer.edu/	Interactive pinmap with crime incident locations. Shows surrounding schools, police stations, and hospitals.		√	√	
Lincoln	NE	http://ims.ci.lincoln.ne.us/CVCommunity/	"Crime View Community" map, interactive, with locations of crime incidents linked to time/date and crime description.	√		√	
Albuquerque	NM	http://www.cabq.gov/police/statistics/index.html (Updated URL)	Neighborhood and beat crime stats only. No maps.			√	
Hobbs	NM	http://www.hobbspd.com/crimestats.htm (Updated URL)	Graphic maps of auto burglary, commercial burglary, residential burglary, and traffic accidents. Also has current crime stats including types of force used.			√	
Cincinnati	OH	http://www.cincinnati-oh.gov/pages/-282/	PDF report contains hot spot maps. Site contains elaborate up-to-date Part 1 & 2 offense stats.		√	√	
Columbus	OH	http://www.columbuspolice.org/precinctstats/	No crime stats.				
Oklahoma City	OK	http://www3.kwtv.com/television/	Interactive pinmap with crime incident locations linked to address info. Uses ESRI map objects.				

Jurisdiction	St	Web Address	Description Of Site Contents	Notable Sites	Calls for service	Reported Crimes	Persons
Tulsa	OK	http://www.tulsapolice.org/mapcentral.html	Interactive pinmaps with locations of crime incidents linked to address, time/date, and crime description. Separate maps for current crime, '04 & '05 crime, meth lab locations, traffic collisions, and sex offenders.	√		√	
Beaverton Police	OR	http://www.ci.beaverton.or.us/departments/police/crime/#maps	PDF crime maps by district with incident locations. Also has PDF version of crime stats by district.			√	
Portland	OR	http://www.cgis.ci.portland.or.us/maps/police/	Density maps of total crime summary for year and semi-interactive pinmaps with incident locations.			√	
Pennsylvania State Police	PA	http://ucrreport.psp.state.pa.us/UCR/Reporting/GIS/GisMain.asp	Density maps of total crime summary for year and semi-interactive pinmaps with incident locations.				
Memphis	TN	https://crimemapper.memphispolice.org/crimemapper/index.cfm	Density maps containing total offenses, total offense per 10,000 pop, total offense/law enforcement officers, and law enforcement staff per 10,000.				
Nashville	TN	http://www.police.nashville.org/stats/maps/sectors.htm	Interactive, up-to-date crime pinmap and UCR stats			√	
Austin	TX	http://www.ci.austin.tx.us/police/crimeinformation	Interactive map linked to crime counts. Does not have incident locations mapped.				

Jurisdiction	St	Web Address	Description Of Site Contents	Notable Sites	Calls for service	Reported Crimes	Persons
Dallas	TX	http://www.ci.dallas.tx.us/dpd/stat_decision.htm	Interactive beat map linked to beat's crime data.			√	
San Antonio	TX	http://maps.sanantonio.gov/WebSite/sapducr/viewer.asp	SAPD Uniform Crime Report Web site - interactive pinmap with crime incident locations linked to incident info.			√	
Salt Lake County	UT	http://www.slsheriff.org/html/stats/community_stats.html	Graphic map with quarterly or monthly crime stats and incident locations.				
Stafford County	VA	http://www.co.stafford.va.us/sheriff/map.htm	No crime stats or map				
Pierce County	WA	http://www.co.pierce.wa.us/pc/abtus/ourorg/sheriff/default.htm	Interactive pinmap of incident locations with links to stats w/in a certain radius of the area.	√			
Snohomish County	WA	http://gis.co.snohomish.wa.us/maps/rso/index.htm	Interactive pinmap with sex offender releasee locations linked to detailed offender info.				√
Spokane	WA	http://www.spokanepolice.org/weeklymap.htm	Interactive pinmap with incident locations linked to a crime summary.	√			
Philadelphia PD	PA	www.cml.upenn.edu/crimebase	Interactive density maps linked to crime summary data for '98-'04				

Reviewed Web Sites - Arizona

Jurisdiction	Web Address	Description Of Site Contents	Notable Site	Brochure Type Site	Crime Statistics	Crime Maps	Interactive Crime Map	Online Reporting
Apache County Sheriff's Office (Saint Johns)	www.apacheone.com	Static page - no crime statistics		√				
Apache Junction PD	www.ajcity.net/police/public_safety.htm	Static page - no crime statistics		√				
Avondale PD	www.ci.avondale.az.us/index.asp?NID=7 8	Monthly crime stats in PDFs		√	√			
Bullhead City PD	www.bullheadcity.com/police/index.asp	Static page - no crime statistics		√				
Carefree Town Marshal's Office	www.carefree.org/index.asp?Type=B_L_ST&SEC={5FDB2E4B-6EB4-44A9-8926CE16F1303FF3}	Static page - no crime statistics		√				
Casa Grande PD	www.ci.casagrande.az.us/cgpd/cgpd.php	Static page - no crime statistics, Online Complaint and Crime Report Forms for property crime under \$250		√				√

Jurisdiction	Web Address	Description Of Site Contents	Notable Site	Brochure Type Site	Crime Statistics	Crime Maps	Interactive Crime Map	Online Reporting
Chandler PD	www.chandlerpd.com	Order Online Reports; Several Online Forms; Corona Solution Interactive Map and reports on calls for service in prior week & previous 12 months - Powered by CADMine; Alarms data for year	√		√	√	√	√
Clarkdale PD	www.clarkdale.az.us/policedept.html	Static Page - Bike Registration Form and House Watch Form (PDFs)		√				√
Cochise County Sheriff's Office (Bisbee)	http://209.180.126.252/Sheriff/Default.htm	Static page - no crime statistics		√				
Coconino County Sheriff's Office (Flagstaff)	http://co.coconino.az.us/sheriff.aspx	Web site down						
Cottonwood PD	www.cottonwoodpd.org/frames.htm	Static Page - Crime Stats last updated in 2002		√	√			
Douglas PD	www.douglasaz.gov/PoliceDepartment/PoliceDepartment.htm	Static page - no crime statistics		√				

Jurisdiction	Web Address	Description Of Site Contents	Notable Site	Brochure Type Site	Crime Statistics	Crime Maps	Interactive Crime Map	Online Reporting
Eagar PD	www.eagar.com/public_safety-police.htm	Static page with police blotter -- list of arrests similar to newspaper		√	√			
Fountain Hills Marshal's Department	www.fh.az.gov/PublicSafety/default.asp	Link to Maricopa County Sheriffs						
Gilbert PD	www.ci.gilbert.az.us/police/default.cfm	Static pages - Graphic maps with crime stats		√	√	√		
Glendale PD	www.ci.glendale.az.us/police	Interactive grid map -- pulls crime stats by month and grid area. No GIS mapping. UCR missing; PDF Crime Clock, Forms, 2003 Performance Report; File an online crime report on accidents,	√		√	√		√
Goodyear PD	http://www.ci.goodyear.az.us/index.asp?NID=14	Static page - no crime statistics		√				
La Paz County Sheriff's Office (Parker)	www.co.la-paz.az.us/sheriff.htm	Static page - no crime statistics		√				
Maricopa County Sheriff's Office (Phoenix)	www.mcso.org/	Static page - no crime statistics		√				

Jurisdiction	Web Address	Description Of Site Contents	Notable Site	Brochure Type Site	Crime Statistics	Crime Maps	Interactive Crime Map	Online Reporting
Mesa PD	www.cityofmesa.org/police/default.asp	Large Web site - online reporting forms; grid maps with updated PDFs of maps with crimes by beat (quarterly - Dec 2005); PDFs of density maps			√	√		√
Metropolitan Area Narcotics Trafficking Interdiction Squads (MANTIS) (Tucson/Pima)	www.ci.tucson.az.us/mantis/	Static page with links to departments and description of drugs		√				
Mohave County Sheriff's Office (Kingman)	www.co.mohave.az.us/1moweb/depts_fies/sheriff_files/about_sheriff.htm	Static page - no crime statistics		√				
Northern Arizona University PD (Flagstaff)	www.nau.edu/~naupd/	PDF of 2005 Crime Report; Online Crime Report Form; Daily Crime Log		√	√			√
Oro Valley PD	www.ovpd.org/	Static Table of Incidents and Offenses through July 05; Static Table of Police Activity, i.e. calls for service, etc. through Feb 06		√	√			

Jurisdiction	Web Address	Description Of Site Contents	Notable Site	Brochure Type Site	Crime Statistics	Crime Maps	Interactive Crime Map	Online Reporting
Paradise Valley PD	www.ci.paradise-valley.az.us/police/	Static Table Crime Stats per month - Feb 06; Static Excel Crime Graphs		√	√			
Payson PD	http://www.ci.payson.az.us/Departments/police/pd-home.htm	Static page - 2004 Annual Report in PDF		√	√			
Peoria PD	http://www.peoriaaz.com/index1.htm	Static Table of Part 1 Crimes 2005; Burglaries by week (Mar 15-21' 06), PDF; Calls for service on interactive map -- list of calls (2005)			√	√	√	
Phoenix PD	www.ci.phoenix.az.us/POLICE/index.htm	Crime stats interactive - 2002; PDF UCR 2005; PDF Jan 2006 UCR Report; PDFs of Hotspot Maps, Sept '05	√		√	√		
Pima Community College DPS (Tucson)	www.pima.edu/dps/	2004 Annual Report - PDF; Monthly Log - PDF -Jan 06		√	√			
Pima County Sheriff's Office (Tucson)	www.pimasheriff.org/	Static Tables of UCR Crimes by month Feb 06		√	√			
Pinal County Sheriff's Office (Florence)	http://co.pinal.az.us/sheriff/	Static page - no crime statistics		√				

Jurisdiction	Web Address	Description Of Site Contents	Notable Site	Brochure Type Site	Crime Statistics	Crime Maps	Interactive Crime Map	Online Reporting
Prescott PD	http://www.cityofprescott.net/services/police/	Static Table of UCR Crimes through 2005		√	√			
Prescott Valley PD	http://www.pvaz.net/Services/police/index.htm	Static Table of UCR Crimes for Aug' 2005		√	√			
Saint Johns PD	www.stjohnsaz.com/public_safety.htm	Static Table/ Graph of 2004 UCR Crime Data		√	√			
Scottsdale PD	www.ci.scottsdale.az.us/police/	Interactive GIS Mapping Application using AutoDesk Mapping From city Web site; Static Table UCR 2004; Static Table of Auto Thefts by Zip & Burglaries 2005	√		√			
Sedona PD	http://www.sedonaaz.gov/egov/department.aspx?dID=357	Static page - no crime statistics		√				
Show Low PD	http://www.ci.showlow.az.us/departments/police/index.htm	Static page - no crime statistics; Few online forms - No report of crime		√				√
Sierra Vista PD	www.ci.sierravista.az.us/Police/index.htm	2004 Annual Report on Crime Statistics (PDF)		√	√			
South Tucson PD	www.tucson.com/stpd	2004 Part One GIS Crime Maps - Static images by quarter		√	√			

Jurisdiction	Web Address	Description Of Site Contents	Notable Site	Brochure Type Site	Crime Statistics	Crime Maps	Interactive Crime Map	Online Reporting
Springerville PD	www.springerville.com/public_safetypolice.htm	Static page - no crime statistics		√				
Surprise PD	http://www.surpriseaz.com/index.asp?N D=22	Static page - no crime statistics		√				
Tempe PD	www.tempe.gov/police/	Online forms for some criminal activity; Alarms & Payment Form; Crime Prevention Forms; Traffic Complaints; Extensive Crime Analysis Site - Updated PDFs; Link to www.azcentral.com crime mapping; Calls for service by beat - interactive and up-to-date	√		√	√	√	√
Tucson PD	http://www.ci.tucson.az.us/police/index.php	Interactive Crime Statistics; 2004 Density Maps of Crime PDF; Comprehensive site - difficulty pulling data by neighborhoods; Online Crime Reporting	√		√	√	√	√

Jurisdiction	Web Address	Description Of Site Contents	Notable Site	Brochure Type Site	Crime Statistics	Crime Maps	Interactive Crime Map	Online Reporting
University of Arizona PD (Tucson)	www.uapd.arizona.edu/	Static Crime Stats Table (2003); Daily Activity Log (Mar 2006); 2005 Annual Report (PDF)		√	√			
Yavapai County Sheriff's Office (Prescott)	www.yumacountysheriff.org/index.html	Static pages - no crime statistics; County site has interactive GIS, but no crime		√				
Yuma PD	http://www.ci.yuma.az.us/coypd/	Static page - no crime statistics		√				
Yuma County SO (Yuma)	http://www.yumacountysheriff.org/	2004 Annual Report (PDF); Online Forms for Accidents; Report Request, etc.			√			√