Management Audit of the

San Jose Police Department Central Identification Unit

Prepared for the
Board of Supervisors of the
County of Santa Clara

Prepared by the

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April 27, 2011

Supervisor Ken Yeager, Chair
Supervisor Dave Cortese, Member
Board of Supervisors Finance and Government Operations Committee
70 West Hedding Street
San Jose, CA 95110

Dear Supervisors Yeager and Cortese:

Pursuant to the direction of the Board of Supervisors, we have completed a management audit of the City of San Jose Police Department Central Identification Unit, which is responsible for providing fingerprint services to the County and other local law enforcement jurisdictions. This audit was conducted pursuant to the authority granted to the Board of Supervisors and cities within the County as signatories to the Memorandum of Understanding for the Cal-ID program, which the Unit operates, and as the funding authority responsible for the allocation of SB 720 monies to that program. As specified by Board Police 3.35.3(A), the audit was performed in accordance with government auditing standards of the United States Government Accountability Office.

Although this audit was not selected through the Board of Supervisors' Management Audit Program risk assessment analysis, which identifies and prioritizes areas of County government for future audit, it was recommended by the Finance and Government Operations Committee and approved by the Board of Supervisors. The FY 2010-11 budget for the Central Identification Unit is $3,684,647, of which slightly less than $1.8 million is to be recovered by annual charges to the jurisdictions that are signatories to the Cal-ID memorandum of understanding, including the County of Santa Clara.

The audit commenced in January 7, 2010, a draft report was issued on November 19, 2010, and an exit conference was conducted on December 15, 2010. This audit report includes four sections regarding staffing and staffing distribution versus workload for the Unit's 10-print function, adding an additional safeguard to ensure the accuracy of

latent fingerprint identifications, addressing a substantial backlog of fingerprint analysis requests to the Unit, and improving the planning and documentation of staff training. During the audit, 11 of the 19 staff were interviewed and observed performing various work functions, procedure and training manuals were reviewed, and data from electronic and paper logs were sampled and analyzed. In addition, a survey of fingerprint agencies in other California counties was surveyed, and in some cases follow-up interviews were conducted, in order to identify and compare practices utilized by these other jurisdictions.

Based on the audit procedures, surveys and other audit techniques described above, a total of 11 recommendations were developed. The implementation of these recommendations would better align 10-print staffing with workload, while permitting one position to be eliminated for a salary savings of $62,713, plus an additional savings of approximately $25,997 in pension, retiree health and current health benefits, for a total cost savings of at least $88,310. Recommendations would also provide an additional safeguard to ensure the accuracy of latent print identifications, provide several methods to reduce the existing backlog of latent fingerprint analysis requests, and improve the planning and documentation of Unit staff training. The audit also recommends additional funding of $13,000 annually, to increase the Unit training budget to $25,000 annually. A brief synopsis of the audit and its key findings follows, and the written response from the San Jose Police Department begins on page 66.

We would like to thank the San Jose Police Department Central Identification Unit for their cooperation and assistance through this audit.

Respectfully submitted,

Roger Mialocq

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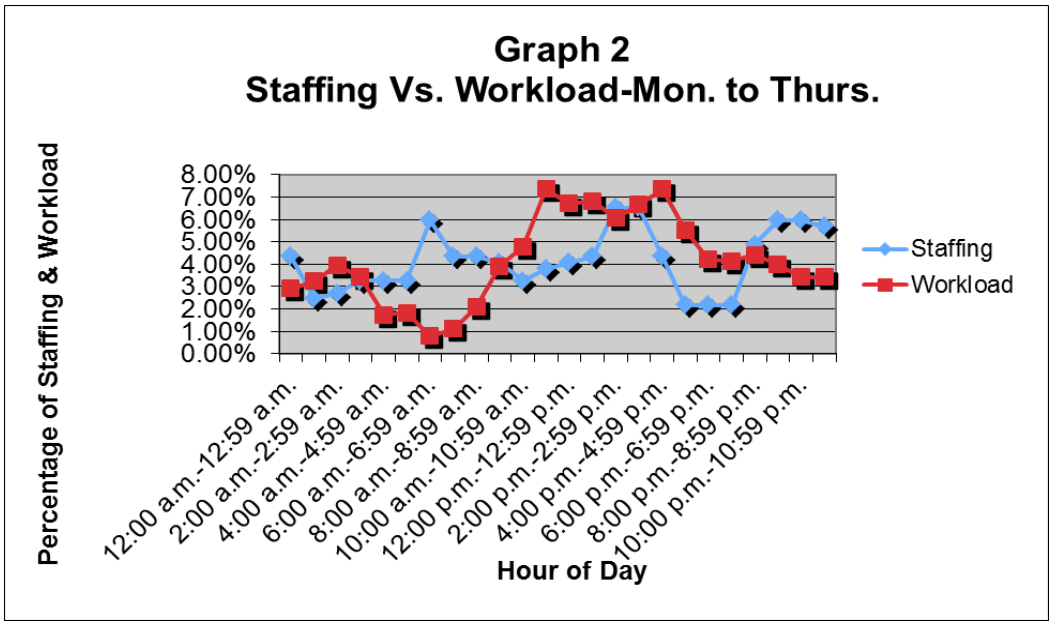
MANAGEMENT AUDIT OF THE SAN JOSE POLICE DEPARTMENT CENTRAL IDENTIFICATION UNIT

AUDIT SYNOPSIS

This management audit examined the operations and practices of the Central Identification Unit to identify opportunities to increase its efficiency, effectiveness and economy. The audit included four findings and 11 recommendations related to the Unit's staffing level and staffing pattern, approach to analyzing latent fingerprints, status of latent fingerprint analysis backlogs, and monitoring of training. The recommendations, if implemented would result in salary savings of $62,713, plus additional benefits savings. The audit also recommends increasing the Unit's training budget by $13,000 to $25,000 a year.

KEY FINDINGS

- Staffing in the 10-print function, which uses full sets of fingerprints to identify individuals, primarily arrestees booked into the County Jail, and adds new individuals to the fingerprint system, is not optimized, relative to workload, as shown in the following table:



  Use of "lights out" processing during low workload periods would better match staffing to workload, while permitting one position to be eliminated. Average variance between staffing and workload under proposed alternatives is only about half the existing variance

- Providing a third latent fingerprint examiner (a primary examiner and two verifiers) on cases where an identification is made based on a single latent image initially identified solely through a match reported by the Unit's Automated Fingerprint Identification System provides an additional safeguard against erroneous identifications, in the circumstance where the risk of an erroneous verification is greatest, and follows other good practices the Unit has adopted.

- As of August 2010, the Unit had a backlog of about 1,100 unassigned latent fingerprint analysis requests, most of which were low priority burglaries and auto thefts without a suspect in custody. To reduce the backlog, law enforcement agencies should be asked to identify cases resolved by other means, and the Unit should permit sufficiently skilled Licensed Fingerprint Examiner I staff to identify latent fingerprints that are of insufficient quality to permit analysis.

- The Unit needs to develop a formal written training plan indicating what formal classroom training staff should receive, how long one-on-one on-the-job training should last, or how skills mastery should be established to allow such training and supervision to be reduced. The Unit training budget should also be increased to $25,000 annually, and staff should be required to share the results of outside training with their peers, by preparing summaries of such training.

A copy of the full report is available at:
http://www.sccgov.org/managementauditor

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Executive Summary

This *Management Audit of the San Jose Police Department Central Identification Unit* was authorized by the Board of Supervisors of the County of Santa Clara, as part of the County's FY 2009-10 and 2010-11 management audit programs, pursuant to the audit authority of the Board and cities within the county as signatories to the Memorandum of Understanding for the Cal-ID program, and pursuant to the Board's status as the funding authority responsible for the allocation of SB 720 monies to the Cal-ID program. Although this audit was not selected through the Board of Supervisors Management Audit Program risk assessment analysis, which identifies and prioritizes areas of County government for future audit, it was recommended by the Finance and Government Operations Committee and approved by the Board of Supervisors. Although the Central Identification Unit is part of the City of San Jose government, the County of Santa Clara was authorized to request a management audit of that function due to the County's role as a signatory to the Memorandum of Understanding (MOU) for the Cal-ID program, under which the Unit operates, and as a funder of the Unit through that MOU. This management audit was conducted under the requirements of the Board of Supervisors Policy Number 3.35, as revised on July 22, 2010. That policy states that management audits are to be conducted under generally accepted auditing standards issued by the United States Government Accountability Office.

Purpose and Scope

The purpose of the management audit was to examine the operations and practices of the Central Identification Unit, and to identify opportunities to increase the Unit's efficiency, effectiveness and economy. This audit report includes findings related to the Unit's staffing level and staffing pattern, approach to analyzing latent fingerprints, status of latent fingerprint analysis backlogs, and monitoring of training. Because a prior study by the Management Audit Division examined in detail the funding methodology for the Unit, funding issues were not examined during this audit. The March 5, 2009 audit of the AFIS-Cal-ID Memorandum of Understanding is available on the Management Audit Division web site in the Clerk of the Board of Supervisors department.

Report Highlights

The report contains four major findings and 11 recommendations. Full implementation of these recommendations would permit the current elimination of one full-time position, saving $62,713 in salary, and additional savings in benefits, plus the potential for additional staff savings in the future. The report also recommended adding $13,000 to the annual training budget for the Central Identification Unit, raising it to $25,000

annually. Recommendations would also provide an additional safeguard against erroneous identifications, permit reductions in caseload backlogs, and improve the process of assigning and documenting staff training. A summary of the major findings and recommendations follows.

10-Print Staffing Is Not Optimized to Workload

The 10-print function, which uses full sets of fingerprints to identify individuals, primarily arrestees booked into County Jail, and also adds new individuals to the local fingerprint database, does not have its staffing optimally matched to workload, resulting in overstaffing. The audit recommended not staffing this function during a four-hour pre-dawn period each day, instead relying on "lights out" processing of 10-prints via the unit's Automatic Fingerprint Identification System. The audit offered two staffing options to better match staffing to workload, permitting reduction of one position to save $62,713 in salaries, plus additional benefits savings. The audit also recommended assessing further reductions in staffing in the future, as the San Jose Police Department implements mobile fingerprint technology to patrol officers.

Providing An Additional Safeguard for Latent Print Identifications

The Central Identification Unit currently only assigns three latent fingerprint examiners (one primary examiner and two verifying examiners) to homicide cases, or to caes where the primary examiner and a verifier do not reach agreement on the conclusion of an examination. The audit recommends adding a second verifying examiner in a third situation, where an identification is made based on a single latent image initially identified solely through a match reported by the Unit's Automated Fingerprint Identification System, a practice followed by other counties surveyed. This step provides an additional safeguard against erroneous identifications, in the circumstance where the risk of an erroneous verification is greatest, and follows other good practices the Unit has already adopted for documenting and reporting identifications.

Reducing the Latent Case Backlog

A Management Audit Division review of latent fingerprint assignment logs for 12 months ending in August 2010 found that the Central Identification Unit at that time had a backlog of about 1,100 analysis requests that had not been assigned, most of them low priority burglaries or auto thefts where there was no suspect in custody. Because this backlog still represents a delay in investigating these cases, the audit recommended that jurisdictions it serves be requested to identify cases previously submitted that no longer require a fingerprint analysis, because they had been resolved by other means. The San Jose Police Department already had taken this step, identifying 300 cases for removal. The audit estimated that this step would reduce the total backlog to about 500

cases. The audit also recommended permitting Latent Fingerprint Examiner I staff, at the discretion of the Unit Supervisor, to identify cases where submitted latent prints are of insufficient quality for analysis, which would further reduce the backlog.

Improving Planning and Documentation of Staff Training

The audit found that there is no formal written training plan indicating what formal classroom training staff should receive, how long one-on-one on-the-job training should last, or how skills master should be demonstrated to conclude one-on-one training and supervision. The audit recommended developing such a training plan, and monitoring compliance of staff members with its requirements. The audit also recommended increasing the Central Identification Unit training budget from $12,000 to $25,000, and requiring staff to share the results of outside training they receive, by preparing summaries of the training for the use of other staff.

Acknowledgements

The Management Audit staff would like to thank the San Jose Police Department Central Identification Unit for their cooperation and assistance through this audit. All Unit staff were courteous, knowledgeable and generous with their time. Some recommendations were the result of interviews with Unit staff, and much of the data contained in the report was provided by Unit personnel, who assisted in making information available and helping the auditor understand and interpret that information.

Introduction

This *Management Audit of the San Jose Police Department Central Identification Unit* was authorized by the Board of Supervisors of the County of Santa Clara, as part of the County's FY 2009-10 and 2010-11 management audit programs, pursuant to the audit authority granted to the Board of Supervisors and cities within the County as signatories to the Memorandum of Understanding for the Cal-ID program, which the Unit operates, and as the funding authority responsible for the allocation of SB 720 monies to that program.

Purpose and Scope

The purpose of the management audit was to examine the operations and practices of the Central Identification Unit, and to identify opportunities to increase the Unit's efficiency, effectiveness and economy. This audit report includes findings related to the Unit's staffing level and staffing pattern, approach to analyzing latent fingerprints, status of latent fingerprint analysis backlogs, and monitoring of training. Because a prior study by the Management Audit Division examined in detail the funding methodology for the Unit, funding issues were not examined during this audit. The March 5, 2009 audit of the AFIS-Cal-ID Memorandum of Understanding is available on the Management Audit Division web site in the Clerk of the Board of Supervisors department.

Audit Methodology

Auditors interviewed the Central Identification Unit Supervisor, and line staff representing all the classifications and levels of experience within the Unit, and observed staff carrying out the various functions of the Unit. Auditors also reviewed procedure manuals, training manuals and other policy documents maintained in the Unit. Auditors used handwritten logs and computer databases to review samples of casework within the Unit for compliance with Unit policies, and to assess Unit workloads in relation to staffing. In addition, auditors reviewed court cases, academic studies and reports by government agencies and by professional groups in the field of fingerprinting for information on the current state of the profession, in order to understand how the Central Identification Unit's practices stood in relation to best and common practices in the field. To further enhance our knowledge of practices elsewhere, Management Audit staff conducted a survey of fingerprint units in other California counties.

The audit was conducted in accordance with generally accepted government auditing standards issued by the United States Government Accountability Office. Pursuant to these requirements, we performed the following management audit procedures:

Audit Planning—The management audit was selected by the Board of Supervisors as a follow-up to a prior study that looked specifically at funding issues related to the Cal-ID program. An estimate of audit work hours was developed at the Board's direction by the Management Audit Division. After audit selection by the Board, a preliminary management audit work plan was developed and provided to the Department.

Entrance Conference—An entrance conference was held with the Central Identification Unit Supervisor, the Operations Support Services Division Program Manager, to whom the Supervisor reports, and the Bureau of Technical Services Commander, whose command includes the Unit.

Pre-Audit Survey—A preliminary review of documentation and an interview with the Unit Supervisor was conducted to obtain an overview understanding of the Unit, and to identify areas of operations that warranted more detailed assessments. Based on the pre-audit survey, the work plan for the management audit was refined.

Field Work—Field work included (a) interviews with management and line staff of the Unit; b) a further review of documentation and other materials provided by the Unit or available from other sources; c) analyses of data collected manually and electronically; d) direct observations of staff carrying out various functions within the Unit; and, e) surveys of other jurisdictions to measure performance and to identify organizational and operational alternatives that might warrant consideration by the Unit.

Draft Report—A draft report was prepared and provided to the Department on November 19, 2010. The draft report was also provided to County Counsel to obtain input regarding legal and labor issues that surfaced during the course of the study.

Exit Conference—An exit conference was held on December 15, 2010 with the Unit Supervisor to collect additional information pertinent to the report, and to obtain the Unit's view on the report findings, conclusions and recommendations. The Operations Support Services Division Program Manager and the Bureau of Technical Services Commander also attended portions of the exit conference.

Final Report—A final report was prepared after review and discussion of the report content with the Unit Supervisor. The Supervisor was requested to provide a written response, which is attached.

Function of the Central Identification Unit

The purpose of the Central Identification Unit is to use friction ridge detail, the patterns of lines found on an individuals fingers, palms and feet, to identify individuals for law enforcement purposes. Friction ridge detail is referred to more colloquially as fingerprints, and for the reader's convenience, that term will be used in this report when discussing the profession and the Unit's work generally. The term friction ridge detail will be used where necessary in discussing more technical aspects of the Unit's functions or procedures, and in some cases palm prints will be discussed as a separate area of work from fingerprints. According to its Statement of Purpose, the Unit carries out this function for at least 15 law enforcement agencies operating in Santa Clara County. Under a Memorandum of Understanding, these include the cities of San Jose, Campbell, Gilroy, Los Altos, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Palo Alto, Santa Clara and Sunnyvale. Its services are available to any law enforcement agency operating in Santa Clara County that wishes to use them, and the Unit also provides some services to the County of Santa Clara, and to State and federal law enforcement agencies, including the San Jose State University Police Department, multi-agency law enforcement task forces and local offices of the Federal Bureau of Investigation, the California Department of Justice and others. As will be discussed later in the report, the County of Santa Clara Sheriff's Department has chosen to provide certain services using its own staff, rather than use the Central Identification Unit.

Underlying the Unit's function are the principles that an individual's fingerprints are immutable, so that, barring permanent damage from injury or disease, the patterns of lines on an individual's fingers and palms and feet, known as friction ridges in the profession, don't change over the course of their life, and that fingerprints are unique to individuals, so that no two people have the exact same fingerprints.

The Unit uses fingerprints for identification purposes in two different ways. First, the Unit receives electronic copies of complete sets of fingerprints and palm prints taken from individuals, most often arrestees being booked into the County Jail, but also prints taken at other law enforcement locations. These prints are taken as a matter of record, to establish the identity of the individual, and to create a known fingerprint record linked to that individual. These sets of prints, called 10-prints, are compared with sets of 10-prints already filed electronically in the County's Automated Fingerprint Identification System (AFIS), which the Unit administers. When a match is found between a new set of 10-prints, and a set existing in AFIS, the comparison is used to identify that individual for the law enforcement agency that submitted the new set of 10-prints. In the jail particularly, an identification is important in order to access prior criminal records and other information about individuals which is used to classify them for proper jail housing, to verify the identity of prisoners being released, and for other purposes. If a new set of 10-prints does not match any existing set, then the new set is

added to the AFIS database, so it can be used in the future to identify that individual. The 10-prints also are compared to fingerprint databases maintained Statewide by the California Department of Justice, and by the Federal Bureau of Investigation. All 10-prints are forwarded by the Unit to the State for inclusion in its database, and the State in turn forwards them for inclusion in the federal database. The 10-print process is further discussed in Section 1 of this report. The 10-print function is carried out on all individuals arrested within Santa Clara County, either through fingerprinting when booked at the Main Jail, or fingerprinting at other law enforcement locations.

In addition to comparing 10-print images, the Central Identification Unit analyzes the source of latent fingerprints, which are fingerprints collected by law enforcement officers or evidence technicians from surfaces or objects found at crime scenes, or from objects otherwise obtained as part of criminal investigations. The Unit uses its 10-print records to determine who deposited a latent print obtained during an investigation, by comparing an image of the latent print with a 10-print record, and determining if both came from the same individual. Latent print analyses are requested of the Unit by law enforcement agencies, and it provides this service to all law enforcement agencies in the County. The Sheriff's Department, which provides law enforcement services in the unincorporated area, the cities of Cupertino, Los Altos Hills and Saratoga, the Valley Transportation Authority system, and County-operated parks, has its own latent fingerprint examiner to perform this function. Issues related to latent fingerprint analysis in the Central Identification Unit are further discussed in Section 2 and Section 3 of this report.

Organization, Budget, Staffing and Workload of the Unit

Organizationally, the Central Identification Unit is located within the San Jose Police Department's Bureau of Technical Services. The Unit is headed by a Unit Supervisor, who reports to a Program Manager for the Operations Support Services Division, which includes the Central Identification Unit, and the Records and Support Services Unit. The Program Manager provides administrative support to the Unit, including assistance in budget preparation, modifications to memoranda of understanding, projects for the local Cal-ID board, etc. The Bureau of Technical Services is headed by a Captain who serves as the Bureau Commander, and by a Deputy Chief of Police, who reports to the Assistant Chief of Police for the City.

Staffing at the time of the audit was 19 positions in the Central Identification Unit, including the Unit Supervisor, eight Latent Fingerprint Examiner I (LFE I) positions primarily responsible for the 10-print function, four Latent Fingerprint Examiner II (LFE II) positions, and five Senior Latent Fingerprint Examiner (Senior LFE) positions. At the time of the exist conference for the audit, two positions were vacant. The Unit also has a Network Engineer position responsible for maintaining AFIS and other fingerprint-

related systems. The Senior LFE and LFE II positions are responsible for latent fingerprint analyses, with Seniors participating in all cases as either the primary analyst or as a verifier, as explained in Section 2. LFE I is the entry-level trainee classification, with staff expected within about three years of hiring to show sufficient progress in their skills to promote to LFE II, as four staff expect to in 2011. New hires generally are LFE Is, because a dearth of experienced fingerprint examiners requires most new staff to be trained from scratch. As discussed in Section 1, LFE Is are primarily responsible for 10-print work, which is the method used to begin training them in fingerprint identification, although LFE IIs would be assigned to this function if no LFE Is were on staff. Staff are assigned to one of three shifts, as the Unit operates at all hours and all days, and all staff, excepting the Network Engineer, work a 4-day, 10-hour shift each week.

The budget for the Unit in FY 2010-11 is $3,684,647, according to information provided by the Unit Supervisor. Slightly less than $1.8 million is to be recovered by annual charges to the jurisdictions that are signatories to the Cal-ID memorandum of understanding, including 15 cities, and the County of Santa Clara, with the charges generally based on a formula reflecting previous usage by each entity of the Unit's services. Another $1.9 million of the FY 2010-11 cost is expected to be paid from a trust fund that is funded by a surcharge on vehicle registration fees, which is used to fund fingerprint identification programs to combat criminal activity involving the use of motor vehicles. If monies from the trust fund are no longer available at some point to pay for Unit costs, users will ultimately pay for its entire cost.

Workload for Calendar 2009, as reported by the Unit, was about 3,700 cases for which a latent fingerprint analysis request was received. Those cases included 14,914 individual pieces of latent print evidence (such as a card to which the image of a latent print on a surface was chemically transferred) to be analyzed and potentially compared. Total 10-print workload in FY 2009-10, according to the Unit, was 87,552 10-print requests.

Central Identification Unit Accomplishments

At the time of the audit, the Central Identification Unit had accomplished the following:

- The number of International Association for Identification (IAI) Certified Latent Print Examiners (CLPE) employed at the Central Identification was eight (8), which is the *highest* number of CLPEs employed by any government agency in the state of California. (Note: As of October 2009, the number of government employed IAI CLPEs in the world was as 689.)

- The number of 2009 fingerprint analysis requests completed by the Central Identification Unit was approximately 3,697, from which 1,145 resulted in fingerprint identifications, roughly a 31% hit ratio.
- Developed protocols for examiners to address the Brady Statute by formally documenting examiner non-agreement in fingerprint analysis reports.
- Developed protocols for examiners to respond to urgent criminal casework involving fingerprint evidence. For example, following a request for a "Rush" fingerprint analysis on evidence related to a robbery investigation resulted in the identification and same-day arrest of 3 robbery suspects involved in a rash of robberies in the Willow Glen and Santa Teresa neighborhoods from January through may 2010 and as many as 30 residential burglaries in the city.
- Responded to recommendations by the National Academy of Science (NAS) report "Strengthening Forensic Science in the United States: A Path Forward" by:
    - Instituting rigorous blind proficiency exams for latent print examiners.
    - Developing qualitative assessment guidelines for fingerprints.
    - Developing a working minimum threshold for examiners to infer identification.
    - Requiring examiners to complete technical summaries and document the fingerprint ridge features relied upon to make decisions.
    - Refining the manner in which the significance of a fingerprint match is expressed in court that is consistent with NAS report recommendations.
    - Establishing quality assurance guidelines for fingerprint identifications and exclusions.
- Through training, provided the Santa Clara County Office of the District Attorney with how the Central Identification Unit has responded to recommendations from the NAS report.
- Developed an accelerated training program for latent print examiner trainees that include automating fingerprints in local and state Automated Fingerprint Identifications Systems, writing reports, and attending advanced fingerprint training courses.
- Developed ongoing in-house training programs for latent print examiners that include Dactyloscopy, Palm Print Recognition and Orientation, Fingerprint Experiments, and Courtroom Testimony.
- Started a "Fingerprint News Update" action in which relevant web sites, periodicals, news and information are routinely monitored and disseminated to latent print examiner staff via email.

Survey of Other Jurisdictions

To gain an understanding of distinctions and similarities across California counties' fingerprint units, the Management Audit Division attempted to survey fingerprint units

serving the 10 largest California counties. We also included the fingerprint unit of the San Joaquin County Sheriff's Department, because of its use of a particular process for 10-prints discussed further in Section 1. The Counties of Alameda, Contra Costa, Los Angeles, Orange, Riverside, Sacramento, San Bernardino, San Diego and San Joaquin provided partial or complete responses to the survey.

Where appropriate, information from the surveys has been included in the body of the audit report. It should be noted that the survey responses are self-reported information. Auditors did not verify the accuracy of the information reported by other agencies. A summary of survey responses from each agency is provided at the end of the Introduction. Copies of the full response by each jurisdiction are available upon request.

Highlights from the survey responses, and follow-up interviews where possible, include:

- The number of 10-print requests processed annually ranged from a low of 27,000 in San Joaquin County, to a high of 360,000 in Los Angeles County, with an average of about 97,500 across the responding jurisdictions.

- The number of latent print items processed annually ranged from a low of 2,560, in San Joaquin County, to a high of 19,000 in San Bernardino County, with an average of about 10,150. By contrast, the Central Identification Unit processed 14,914 items in Calendar Year 2009.

- Six jurisdictions permitted staff to work four 10-hour days as their basic shift. One permitted staff to work 12-hour days, and only one jurisdiction required staff to work five days per week.

- Jurisdictions devoted from 8 to 31 full-time equivalent positions to 10-print processing as a primary duty, with an average of 13. The Central Identification Unit devotes nine FTEs to this function as the primary duty, although this staff also has other responsibilities. Also, three jurisdictions, as discussed in Section 1, provide the function without staff at selected times, and San Joaquin County performs it by computer at all times, without using human fingerprint examiners.

- Jurisdictions assigned from 87 to 500 latent fingerprint cases per examiner per year, with an average of about 270 cases assigned. The Central Identification Unit assigned an average of about 163 cases a year to LFE IIs and Senior LFEs. Two jurisdictions allowed examiners working more difficult cases or cases with more serious charges to maintain lower caseloads.

Acknowledgements

The Management Audit staff would like to thank the San Jose Police Department Central Identification Unit for their cooperation and assistance through this audit. All Unit staff were courteous, knowledgeable and generous with their time. Some recommendations were the result of interviews with Unit staff, and much of the data contained in the report was provided by Unit personnel, who assisted in making information available and helping the auditor understand and interpret that information.

Fingerprint Survey Results				
County Name	**San Bernardino**	**Alameda**	**Contra Costa**	**Sacramento County**
Number of 10-Print Requests Annually	110,000	85,800	54,750	54,750
Latent Print Items Processed Annually	19,000	16,191	4,308 cases	not provided
Staff Assigned to 10-Print Function	12	17	10	1/shift-4 FTEs per schedule
Staff assigned to latent print function	8	1	3	5, 3 manual comparison, 2-AFIS
Shift Schedule	4/10 for 10-print Open 6 a.m.-2 a.m. 9/80 latent Day shift only	5 days/7.5 hours	10-prints: 9/80 Latent: 5/8	**10-print:** 4/12-four one week, three the following week **latent:** 4/10
Use less than full 10-print	Yes. Thumprints scanned and searched lights out. 10-print during booking process	No.	No	No
Source of 10-print identification.	Local AFIS	Local AFIS	Local AFIS	Local AFIS & DOJ
Human review vs. lights-out.	Both	Human review	Human review	Human review
When is lights-out used.	Most searches run lights out, but some require human help, due to poor quality prints, record error, or AFIS scores that fall between auto-hit/auto no-hit threshholds	N/A		
Review print quality for non-hits?	Yes			Yes
Who reviews print quality?	Fingerprint examiner			Fingerprint examiner
Staffing of 10-print function by hour.	Other duties-walk-ins from coroner, DMV, pawn slips and checks with rolled prints, priors from DA, etc.	24/7	24/7	24/7-also correct booking errors and notify other agencies about errors
Time required for 10-print ID	15 minutes	15-30 minutes	5 minutes, 1 hour max standard	2 hours

Fingerprint Survey Results				
County Name	**San Bernardino**	**Alameda**	**Contra Costa**	**Sacramento County**
Latent cases assigned	10/week, 500/year, with no backlog. Cases completed in 30 days.	107/year	4308. Caseload is 20-30 per FTE 906 cases eliminated by prescreening	latent impressions: 31,293 individuals ID: 950 impressions ID: 1,486 latents into CalID: 4,946
Primary ID reports completed.	3/week, 134/year	18	175/year. Caseload is 10/FTE	individuals ID: 950 impressions ID: 1,486
Verifications	4/week, 190/year includes negative verifications	107	175	
Lowe workload for LFEs assigned to homicides and other serious case types?	Yes	They only have one FTE	No	No. 3 manual LFEs do homicides
When are multiple verifications used?	Single impression requires a 2nd verifier. This is usually the result of AFIS searches & is the highest risk scenario for erroneous IDs to occur. Done for both known comparisons and AFIS hits.	No	Single impression requires a 2nd identifier.	Single impression requires a 2nd identifier

Fingerprint Survey Results				
County Name	**Orange County**	**San Diego County**	**Los Angeles County**	**Riverside County**
Number of 10-Print Requests Annually	93,000	132,857	360,000	68,500
Latent Print Items Processed Annually	7,193			5800
Staff Assigned to 10-Print Function	8	11	31	9
Staff assigned to latent print function	6.5	6		8
Shift Schedule	3 staff: 5/8 9 staff: 4/10 2 staff: 9/80 1 0.5 FTE position	4 staff: 5/8 (day shift) 7 staff: 4/10 (PM shift, mid shift	5/8 4/10	10-print: 4/10 Operates 6 a.m.-3 a.m.
Use less than full 10-print	No	No	No, unless deformations	Yes, Fast ID single finger
Source of 10-print identification.	Local AFIS	Local AFIS	Local AFIS	Local AFIS
Human review vs. lights-out.	Human review	lights out threshhold-1500=5000 human examine	Human review	Lights out, 3,000 score 3 a.m.-6 a.m.
When is lights-out used.				3 a.m.-6 a.m.
Review print quality for non-hits?				Yes
Who reviews print quality?				Fingerprint technician
Staffing of 10-print function by hour.		24/7	24/7	
Time required for 10-print ID	11 minutes	15 minutes	10-15 minutes, plus verification	

Fingerprint Survey Results				
County Name	**Orange County**	**San Diego County**	**Los Angeles County**	**Riverside County**
Latent cases assigned	7/week, 355 annually, caseload standard is 8/examiner	12/month, 152/year		15/week, 700/year, caseload standard is 10+/examiner
Primary ID reports completed.	6/week, 322 annually, caseload standard is 6/examiner	2/month, 30/year		5/week, 280 year
Verifications	6/week, 322 annually, caseload 6/examiner	2/month, 30/year		5/week, 280/year
Lowe workload for LFEs assigned to homicides and other serious case types?	Yes	No		No
When are multiple verifications used?	When a tiebreaker is needed, such as when primary makes an ID, and the cosigner is inconclusive in verification	Tiebreaker if primary and cosigner disagree No value homicide prints require verification		No

Fingerprint Survey Results	
County Name	**San Joaquin County**
Number of 10-Print Requests Annually	27,000
Latent Print Items Processed Annually	2,560
Staff Assigned to 10-Print Function	8
Staff assigned to latent print function	8
Shift Schedule	4/10
Use less than full 10-print	Yes. Not explained
Source of 10-print identification.	Local AFIS
Human review vs. lights-out.	Lights out
When is lights-out used.	
Review print quality for non-hits?	Yes
Who reviews print quality?	Non-fingerprint examiner
Staffing of 10-print function by hour.	
Time required for 10-print ID	30 minutes

Fingerprint Survey Results	
County Name	**San Joaquin County**
Latent cases assigned	25/week, 250/year
Primary ID reports completed.	5/week, 260 year
Verifications	5/week, 260 year
Lowe workload for LFEs assigned to homicides and other serious case types?	No
When are multiple verifications used?	No

Section 1. Matching 10-Print Staffing to Workload

Background/Problem

- **One of the primary functions of the Central Identification Unit is 10-print booking processing, which uses full sets of fingerprints to identify individuals, primarily arrestees booked into the County Jail, and also adds previously unidentified individuals to the local fingerprint database. A comparison of 10-print workload to staffing indicates that staffing is not fully optimized. Furthermore, a survey of fingerprint units in other large counties showed that some do not staff this function at all times, as does CIU.**

Adverse Effect

- **The mismatch between 10-print staffing and workload in CIU, and the decision to staff the function around the clock, results in overstaffing.**

Recommendations

- **By implementing partial "lights out" processing and not staffing this function in a four-hour pre-dawn period, where workload is the lightest, and by adjusting staffing to workload during other times as described in this section, CIU could still meet its workload requirements, while eliminating one Latent Fingerprint Examiner I position. Either of the alternative scheduling plans provided in this section would substantially reduce the variance in staffing versus workload distribution from that existing under the current staffing. In addition, as the San Jose Police Department implements mobile fingerprint identification technology to patrol officers, the unit should assess whether that technology would permit further reductions in 10-print staffing.**

- **Implementing these recommendations and eliminating the position would save an estimated $62,713 annually in salary, plus additional benefit savings, with potential additional savings in the future, if expansion of "lights out" processing or use of mobile technology permits additional staff reductions.**

10-Print Processing

One of the primary functions of the San Jose Police Department Central Identification Unit (CIU) is 10-print processing. A 10-print is a fully rolled set of an individual's fingerprints and palm prints. Sets of 10-prints obtained from individuals are transmitted electronically from Livescan fingerprinting stations in various locations in the County to the Central Identification Unit. A principal source of 10-prints are new arrestees being booked into the County Jail, although 10-prints are also received from local police departments and other locations for arrestees, individuals booked and released by police for a later court appearance, and various types of criminal registrants.

This function is very important, particularly in the jail, since the classification function and proper housing for inmates is highly dependent on properly identifying new inmates, in order to properly access criminal history records and related information.

The rolled sets of 10-prints are received electronically by CIU from the locations where the print is taken, as a transmission into the unit's Automated Fingerprint Identification System (AFIS). The submitted sets of fingerprints are stored in an electronic queue in AFIS, and are called up one set at a time by CIU staff, sitting at an AFIS workstation. Staff members first review the prints to make sure they are properly rolled images, not too dark or too light, and not smeared. If there is a problem with a set of prints, the location where they were taken will be contacted to either retake the prints, or to explain why they are not clearer. As each set of prints is called up, the AFIS system, using a mathematical logarithm, suggests existing sets of 10-prints, identified to a named individual, that potentially match the new set of prints being processed. The system is currently set to provide 10 candidates whose file prints are compared with the new set of prints, with a score for each candidate indicating what the system believes is the extent of agreement. CIU staff will examine the candidate comparisons, looking at the new 10-print, and comparing it to the candidate 10-prints on file. If one of the 10 candidate individuals in fact matches the new set of prints, CIU staff will communicate the verified identity back to the law enforcement agency submitting the new 10-prints. If none of the suggested candidates matches the new set of 10-prints, that triggers the assignment of a new Person File Number (PFN) in AFIS, and in the County's Criminal Justice Information Control (CJIC) system to the individual that is the source of the new 10-prints. CJIC is the County's primary electronic system for criminal justice information, and the PFN is the primary identification number for individuals in that system.

In addition, the AFIS provides, for each 10-print set submitted, 10 fingerprint "reverse searches." These are latent fingerprints taken from crime scenes, which have been electronically entered into AFIS, but have not been previously identified to any individual whose 10-prints are already included in the AFIS 10-print database. Again based on a mathematical logarithm, AFIS provides candidate prints from the unidentified latent print database that it believes may match the newly submitted 10-prints. The staff examiner reviews the candidate latents proposed by AFIS, to see if in fact they match any of the new 10-prints. One of the Latent Fingerprint Examiner I staff we interviewed had made such a match about a week before the interview, and said there have been days when she's made a couple matches, and then she can go many days without making any.

10-Print Workload Versus Staffing

The 10-print function is staffed at all times in the Central Identification Unit (CIU), and is the primary job duty of Latent Fingerprint Examiner I staff members. Because the staff composition of the Unit at the start of the audit included eight LFE I positions, including three staff who had chosen not to seek promotion to LFE II, which would require them to conduct analyses of latent fingerprints, the 10-print function has been staffed with LFE Is, with higher-classification staff only backfilling the function when LFE Is were not available. This permits higher-classification staff to focus on latent print analyses, which also periodically requires court testimony, which is rarely required for 10-print work. However, the Unit Supervisor reported that the eight LFE I positions could be staffed with LFE IIs as well, who would then have both 10-print and latent print responsibilities. The Unit Supervisor noted that this approach differs from some other jurisdictions that have completely separate staff organizations for 10-print and latent print functions.

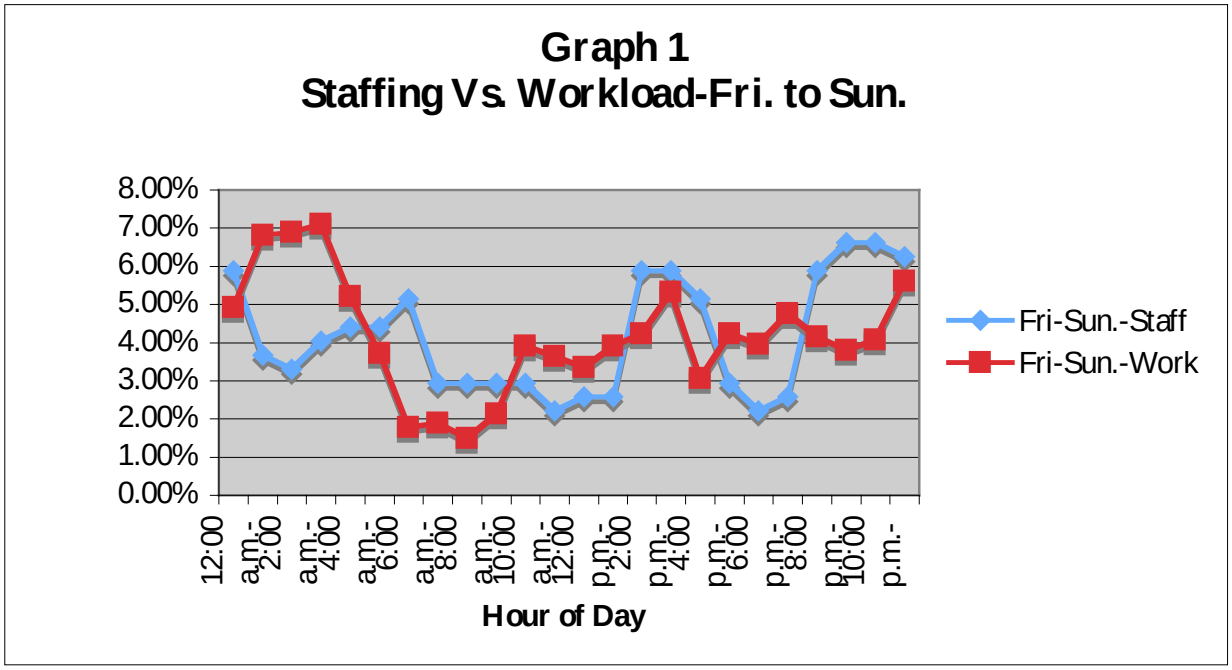
As the Unit is currently structured, working the 10-print function is designed as the introduction of LFE Is to fingerprint examination, and is considered less difficult than examining latent prints from crime scenes, because the comparison being made is between one complete set of fingerprints and another, and because the new 10-prints being received are generally of good quality.

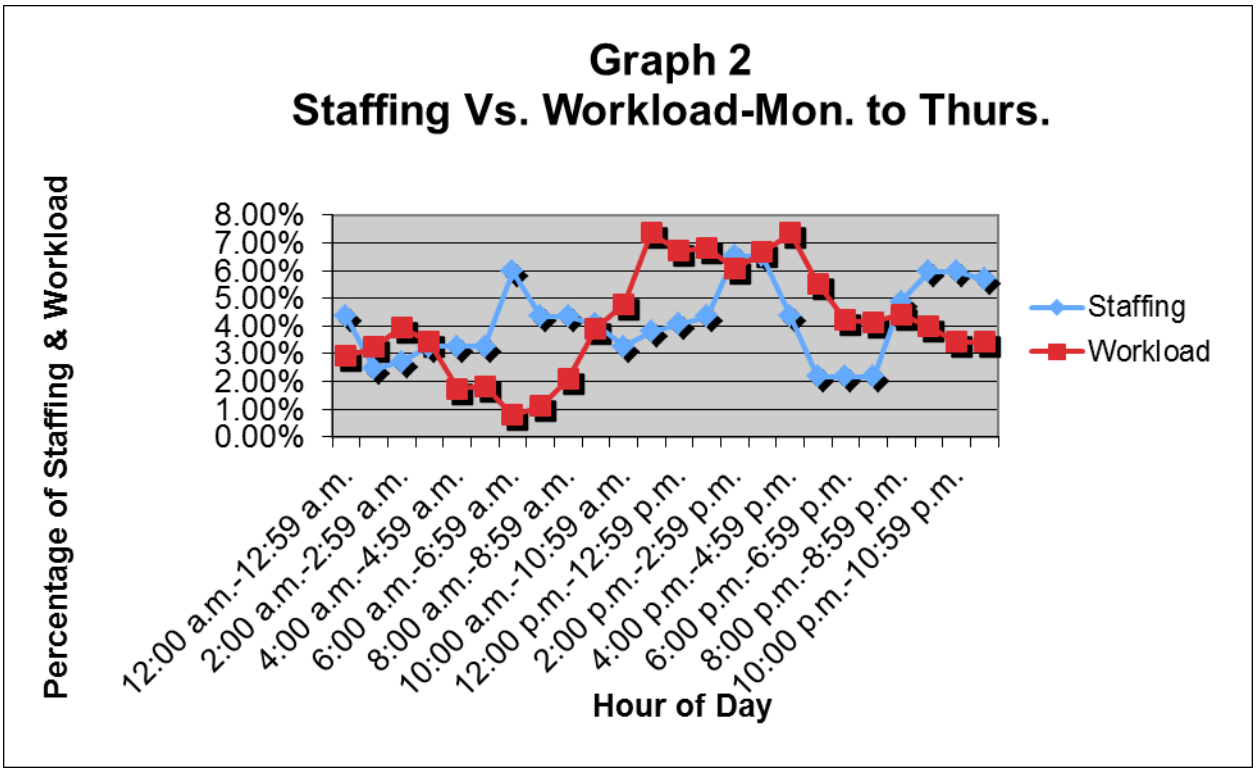
At the start of this audit, 10-print staffing in CIU was eight full-time positions, working one of three shifts, 6 a.m.-4:30 p.m., 2 p.m.-12:30 a.m., or 8 p.m.-6:30 a.m. Staff work four 10-hour days, a policy that goes back many years and was negotiated for most San Jose Police Department staff, according to the Unit Supervisor, and was provided to parallel the work schedule of patrol officers who work a 4-10 shift. In order to provide full-time coverage for the 10-print function, staff have varying days off, with three LFE Is having neither Saturday nor Sunday off. Staff always have a three-day weekend, however.

To assess whether current staffing patterns were optimized relative to workload, the Management Audit staff first assessed the 10-print workload by day of the week and hour of the day. While the CIU maintains statistics on the total volume of 10-print requests, it did not analyze them according to these variables. Therefore, Management Audit staff used a combination of handwritten logs maintained by CIU 10-print staff, on which they write down each 10-print request, and data generated by the AFIS system as to what time each 10-print request occurred. We sampled this information for 35 days during 2009. The sample was balanced by day of the week, so that five Sundays, five Mondays, etc. were included, because we suspected there would be greater 10-print activity on Fridays and Saturdays, reflecting greater law enforcement activity and more jail bookings. The sample also included dates throughout the year, but was designed

not to include major holidays that might not have typical workloads. Using this data, we calculated the percentage of daily 10-print volume that occurred during each hour of the day.

We also calculated the distribution of Latent Fingerprint Examiner I hours in the unit, by taking the staffing schedule in effect as of January 4, 2010, which was provided by the Unit Supervisor, and calculating the percentage of daily staff hours that were provided for each hour of each day of the week. The analysis assumed that staff would take a half-hour lunch break during one of the one-hour periods in the middle of their shift, and that the breaks would be staggered, so that no more than one staff person was on break at a time. The following two graphs show both the workload distribution, and the staffing distribution. Graph 1 shows these distributions for Monday through Thursday, Graph 2 shows them for Friday through Sunday.





As the graphs show, 10-print volumes, as a percentage of the daily workload, are lowest during the early morning hours. The slow period is approximately 4 a.m. to 8 a.m. on Mondays through Thursdays, and approximately 6 a.m. to 10 a.m. on Fridays through Sundays. This shift probably reflects the fact that fingerprint transmissions from locations around the County, other than the County Jail, only operate during regular business hours, and do not operate on the weekends, which is also the reason that the percentage of workload occurring during daylight hours is lower from Friday through Sunday. The time shift also probably reflects greater law enforcement activity on Friday and Saturday nights continuing to the post-midnight hours on Saturday and Sunday mornings. Among other activity sources, this timing mirrors the 2 a.m. closure under State law of businesses that serve alcohol.

Comparing the two graphs, it appears that a match of staffing to workload has been attempted, but has not been entirely successful. More staffing is provided on weekend night and early morning hours than during the week, but the difference in staffing is less than in workload. Also, the high percentage of workload that occurs from 11 a.m. to 5 p.m. on weekend days is not fully matched by staffing, which is high during only during the 2 p.m. to 4 p.m. period, drops off again during the commute period, and rises again starting at 8 p.m., even though the percentage of workload during that period is lower than at other times during the day.

Other Counties' Experience

As part of this audit, Management Audit staff surveyed the 10 largest counties in California for information about their fingerprint identification operations. Also included in the survey was San Joaquin County, for reasons that will be explained shortly. The survey included various questions about the 10-print identification function, and how it was staffed and organized.

In addition to San Joaquin County, we received responses from Alameda, Contra Costa, Los Angeles, Orange, Riverside, San Bernardino and San Diego counties. Of the counties responding, Riverside County and San Bernardino County do not operate their 10-print function with human fingerprint examiners at all times. Specifically, from 2 a.m. to 6 a.m. in San Bernardino County, and 3 a.m. to 6 a.m. in Riverside County, 10-print identifications are made only based on the logarithmic scores returned by those counties' AFIS system, which is actually a regional system serving both counties, without verification by a human fingerprint examiner. This method is known as "lights out" processing, reflecting the fact that identifications continue to be reported by law enforcement jurisdictions even when the fingerprint unit responsible for 10-print identifications is physically closed. In a lights out system, candidates with scores falling outside a specified threshold are deemed to be positively identified, or deemed to represent a new 10-print requiring a new identification number, without having the 10-prints verified by a human examiner.

As an example, in addition to the partial use of lights out processing at selected times in San Bernardino and Riverside counties, San Diego County reported using a modified lights out system at all times. According to the day shift supervisor in the County's 10-print unit, new 10-prints are entered into its AFIS system. Proposed 10-print matches reported back by AFIS with a score exceeding 5,000 are deemed "auto hits" and are automatically returned as an identification to the law enforcement agency submitting the new 10-print. Proposed matches with a score of less than 1,500 are deemed to not match any existing 10-prints in AFIS, and are automatically assigned a new identification number. A fingerprint examiner reviews AFIS returns with scores from 1,500 to 5,000, or any 10-prints where a human review is requested by the submitting agency, to determine if a match within AFIS in fact exists. The supervisor reported that only about 20 percent of the submitted 10-prints require an examiner's review.

By contrast to those counties that are using lights out processing at certain times of the day, or with certain parameters, San Joaquin County is using it for all 10-print processing. According to the supervisor of the County's evidence technician staff, the threshold AFIS score for establishing a 10-print identification was set by Cogent, the vendor that supplied the County's system, and has not been altered by the County. He

said there have been no instances of errors in identification since lights out processing was instituted. Lights out processing is also used by other smaller counties for 10-print processing.

Based on these practices of other counties, and the need to better conform 10-print staffing to workload, we recommend that the San Jose Police Department Central Identification Unit initiate a program of processing 10-print identifications only using the lights out method during the least busy four-hour period each day. Based on our analysis of workload discussed earlier in this section, that period would be 4 a.m.-8 a.m. on weekdays, and 6 a.m.-10 a.m. Saturday and Sunday. The following table provides both the existing staffing pattern at the time of the audit, and our proposed alternative, incorporated the four-hour lights out period each day.

Table 1
Current 10-Print Staffing, and Two Proposed Staffing Options
Including Lights Out Periods

Current Staffing

Staffer	Shift	Days Off
A	6 a.m.-4:30 p.m.	Th-Sat i
B	6 a.m.-4:30 p.m.	Tu-Th
C	6 a.m.-4:30 p.m.	Sun-Tu
D	2 p.m.-12:30 a.m.	Wed-Fri
E	2 p.m.-12:30 a.m.	Sun-Tu
F	8 p.m.-6:30 a.m.	Sat-Mon
G	8 p.m.-6:30 a.m.	Wed-Fri
H	8 p.m.-6:30 a.m.	Sun-Tu

Proposed Staffing, Option 1, 20-Hours Daily, 4-10 Shifts

Staffer	Shift	Days Off
A	Su-M, 5:30 p.m.-4:00 a.m., F-Sa 7 p.m.-5:30 a.m	Wed-Fr
B	M-Th 8 a.m.-6:30 p.m.	Fri-Sun
C	M-Tu, 8 a.m.-6:30 p.m., Sa-Su 8:30 a.m.-7 p.m	We-Fri
D	Su, Tu 5:30 p.m.-4:00 a.m., F-Sa 7 p.m.-5:30 a.m.	Mon, Wed, Th
E	M-F 8 a.m.-6:30 p.m	Tu, Sat, Sun
F	Tu-Th 8 a.m.-6:30 p.m., F 8:30 a.m.-7 p.m.	Sat-Mon
G	W-Th 5:30 p.m.-4:00 a.m. F-Sa 7 p.m.-5:30 a.m	Sun-Tu

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Proposed Staffing, Option 2, 20-Hours Daily, Combo 4-10 & 5-8 Shifts

Staffer	Shift	Days Off
A	Su, 9 a.m.-5:30 p.m., M-T, 8-4:30 p.m. W-Th, 8:30-4 p.m.	Fri-Sat.
B	M-T, F 8:30-5 p.m, Sa-Su, 9:30-6 p.m.	Wed.-Th.
C	M-F, 8 a.m.-4:30 p.m.	Sa-Su
D	Su, M, F, Sa, 2 p.m.-12:30 a.m.	Tu, Wed, Th.
E	Su-Tu, 5 p.m.-3:30 a.m. Sa 6 p.m.-4:30 p.m.	Wed., Th., Fri.
F	Tu-Th, 5 p.m.-3:30 a.m., Fr.-6 p.m.-4:30 a.m.	Sa-Mo
G	Wed.-Th., 5 p.m.-3:30 a.m., Fri.-Sa., 6 p.m.-4:30 a.m.	Su, Mo., Tu.

These tables show the current staffing pattern for 10-print staff, and two proposed 10-print staffing options. Under the first option, which retains the existing policy of giving all staff 10-hour shifts, four days a week, the lights out period would be 4 a.m.-8 a.m. Monday through Friday, and 5:30 a.m.-8:30 a.m. on Saturday and Sunday. That option provides a day shift and a night shift. Under the second option, which provides five-day, eight-hour shifts for day-shift staffing and four-day, 10-hour shifts for one swing

shift and several night shifts, the lights out period would be 3:30 a.m.-8 a.m. Monday through Friday, and 4:30 a.m.-9:30 a.m. Saturday and Sunday.

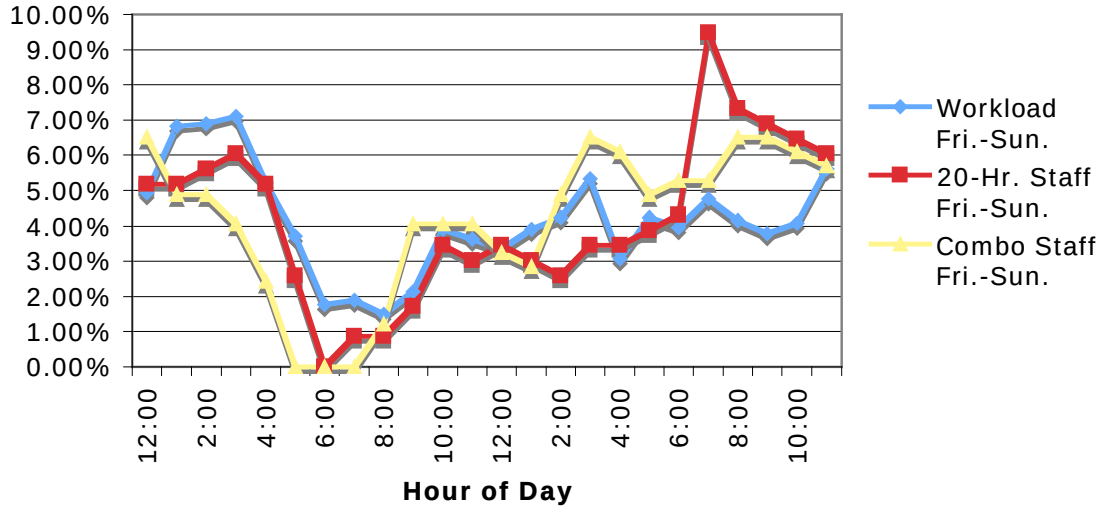
Strengths and weaknesses of the proposed options include the following:

Option 1—The four-10 option retains existing 10-hour shifts for staff, but requires staff to start and end their shift at different times on certain days, as shown in the table to provide the desired 10-print coverage. It also requires that the current policy of providing three consecutive days off be changed for two positions, who would still have a two-day "weekend" and a third separate day off each week.Also, three of the positions would have neither Saturday nor Sunday as one of their days off, as is the case under the current shift schedule.

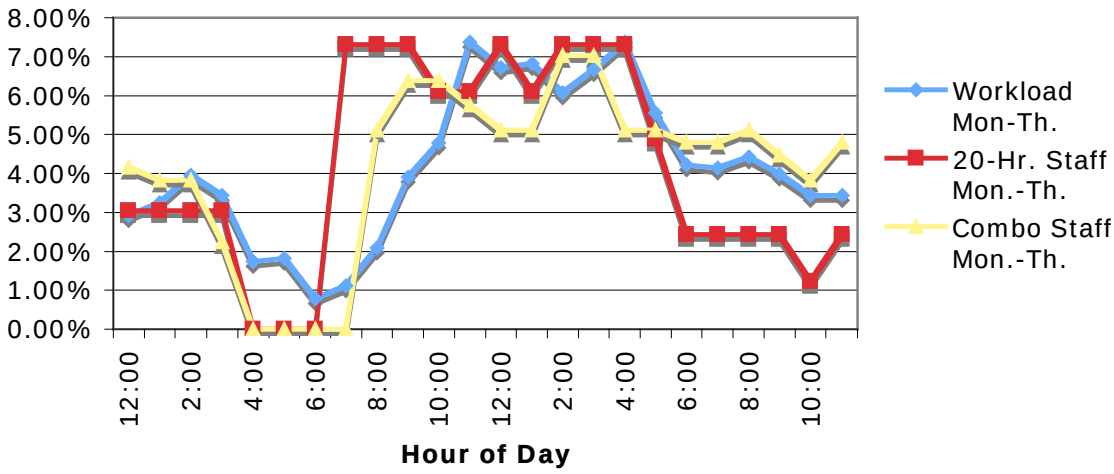
Option 2—The combination shift pattern, which provides five-day, eight-hour staffing on day shift, and four-day, 10-hour staffing on the swing shift and night shifts, provides consecutive days off for all staff, two days per week for staff working the five-eight schedule, and three days per week for four-10 schedule staff. Three positions would have neither Saturday nor Sunday as one of their days off, as is the case under the current shift schedule.

Attached to the end of this section is a multi-page table, showing the staff hours available for each hour of each day of the week under the existing staffing pattern and the two optional proposed staffing patterns. Our review of these tables indicates that during the highest workload periods, our proposed staffing change provides more staff to the 10-print function than the existing staffing pattern, even while eliminating one position. These tables assume that staff would continue to take a half-hour meal break during their shift, and that these breaks would not overlap during shifts with multiple staff assigned to the 10-print function. The same material is shown in the following graphs, which show the current staffing pattern, and our proposed pattern with lights out periods.

Graph 3
Fri.- Sat. Workload & Alternative Staffing Options



Graph 4
Mon.-Th. Workload & Alternative Staffing Options



The proposed staffing graphs show that a higher proportion of staffing is provided during regular business hours from Monday through Thursday, and similar or higher staffing than the current level is provided during the nighttime and early morning hours on weekends.

To further illustrate the advantages we believe alternative staffing patterns provide, we also calculated, separately for the Monday through Thursday period and the Friday through Sunday period, the percentage variance between workload and staffing by hour of the day for the existing staffing pattern, and our proposed alternatives. The variance calculation compared the percentage of staffing provided for each hour of the day with the percentage of workload, and calculated the percentage variance as an absolute value, because our concern was the magnitude of the variance between staffing and workload, not whether that variance was positive or negative. The following table shows the results of that calculation.

Table 2
Percentage Variance Staffing to Workload, By Time of Day & Part of Week

	Friday Through Sunday			Monday Through Thursday		
Time of Day	**Existing**	**Proposed 20-Hour**	**Proposed Combo**	**Existing**	**Proposed 20-Hour**	**Proposed Combo**
12:00 a.m.-12:59 a.m.	19.48%	5.06%	32.11%	49.11%	4.56%	42.44%
1:00 a.m.-1:59 a.m.	46.09%	24.16%	28.47%	24.85%	6.32%	17.81%
2:00 a.m.-2:59 a.m.	52.05%	18.80%	29.31%	31.33%	22.96%	3.12%
3:00 a.m.-3:59 a.m.	43.06%	15.04%	42.77%	5.11%	11.29%	34.92%
4:00 a.m.-4:59 a.m.	15.25%	0.64%	53.15%	86.94%		
5:00 a.m.-5:59 a.m.	18.83%	30.34%		78.93%		
6:00 a.m.-6:59 a.m.	189.87%			665.42%		
7:00 a.m.-7:59 a.m.	55.07%			288.37%		
8:00 a.m.-8:59 a.m.	96.98%		18.33%	108.75%	251.31%	145.43%
9:00 a.m.-9:59 a.m.	37.51%	19.39%	90.06%	4.38%	87.37%	63.62%
10:00 a.m.-10:59 a.m.	24.86%	11.91%	3.85%	31.93%	27.29%	33.39%
11:00 a.m.-11:59 a.m.	39.26%	16.93%	11.92%	48.37%	17.24%	21.95%
12:00 p.m.-12:59 p.m.	23.17%	2.95%	2.91%	39.32%	8.93%	23.90%
1:00 p.m.-1:59 p.m.	34.26%	22.92%	27.31%	36.26%	10.61%	25.06%
2:00 p.m.-2:59 p.m.	38.82%	38.97%	15.12%	7.51%	20.62%	15.87%
3:00 p.m.-3:59 p.m.	10.43%	35.27%	22.10%	2.15%	9.78%	5.46%
4:00 p.m.-4:59 p.m.	67.82%	12.43%	98.81%	40.99%	0.69%	30.62%
5:00 p.m.-5:59 p.m.	30.59%	8.45%	15.12%	60.80%	12.03%	7.82%
6:00 p.m.-6:59 p.m.	44.22%	8.99%	33.62%	48.46%	42.17%	13.63%
7:00 p.m.-7:59 p.m.	45.96%	99.14%	10.98%	47.48%	41.08%	15.77%
8:00 p.m.-8:59 p.m.	41.52%	76.29%	56.48%	10.51%	44.89%	15.50%
9:00 p.m.-9:59 p.m.	74.45%	81.80%	71.46%	50.08%	38.77%	12.29%
10:00 p.m.-10:59 p.m.	62.36%	58.63%	49.60%	73.96%	64.51%	11.56%
11:00 p.m.-11:59 p.m.	11.42%	7.58%	1.46%	66.05%	29.03%	39.45%
Average Variance	**46.81%**	**28.37%**	**34.04%**	**79.46%**	**37.57%**	**28.98%**
Median Variance	**40.39%**	**18.80%**	**28.89%**	**40.99%**	**20.62%**	**17.81%**

As the table shows, under the existing staffing pattern, the average variance in staffing versus workload for any hour of the day is about 47 percent for the Friday through Sunday period, and 79.46 percent for the Monday through Thursday period. In otherwise, for an average hour from Friday through Sunday, the proportion of staffing provided for that hour could be 47 percent greater or 47 percent less than the proportion of workload that occurs during that hour. The table further shows that

under either of our alternative staffing options, the average variance is far less, so that the alternatives do an overall better job of matching staffing to workload than does the existing staffing pattern, because our alternatives deliberately provide no staffing during the lights out periods, in order to redeploy staffing to the periods that are busier.

We propose these options as a method for the Central Identification Unit to begin implementing lights out 10-print processing. If this initial proposal has successful results, in terms of making most 10-print identifications without use of a human fingerprint examiner, lights out processing could be expanded in terms of the hours provided, offering the opportunity for further staff reductions.

During the exit conference for this audit, the Unit Supervisor stated that she was not inherently opposed to implementing lights out 10-print processing in the Unit, that she had asked representatives of other agencies about it during conferences, and received both positive and negative comments. However, she indicated that she would prefer to implement it more slowly than recommended here, without the elimination of staff, for the following reasons:

- In the past, there have been problems with multiple sets of 10-prints from the same individual erroneously resulting in creation of multiple Personal File Numbers (PFNs) in CJIC. Unit staff have among their duties correcting these problems, and the Unit Supervisor indicated that the multiples now being corrected are generally not the result of errors by her staff, which a review by Management Audit staff of the last six month's of corrections confirmed. She is concerned that shifting to lights out processing could reintroduce these errors into AFIS.

- She said setting a parameter within which a 10-print must be reviewed by a human examiner, but not having an examiner present, delays processing that 10-print until staff is available. If this queue of unresolved 10-prints gets too large, it could impact the booking process of inmates into the jail, and/or the workflow once 10-print staff arrives for work. This problem would be exacerbated if the AFIS system crashes during a period when no staff is available to diagnose the problem and restart it.

- Depending on how broad the parameters are for permitting a 10-print to be processed without human review, the possibility always exists that an individual may not be correctly identified. The Unit Supervisor is particularly concerned about individuals who are already in AFIS, and may have outstanding warrants that indicate they may be dangerous, and are not correctly identified through lights out processing, resulting in their being released inappropriately.

- The Unit Supervisor noted that two fingerprint analyst positions (LFE Is) that were filled at the start of the audit were vacated by retirements during its course, and that four other staff (1 LFE I, two Senior LFEs and the Supervisor) are eligible to retire, with full retirement benefits, between now and 2012, with another (also a Senior LFE) eligible to retire in 2014. She is concerned that eliminating a position would further reduce the flexibility needed to cover the workload when these positions are vacated.

Because of these concerns, the Unit Supervisor would like to inaugurate lights out processing on a smaller scale, in conjunction with a pending project to upgrade the AFIS system. She said the current AFIS system in the Unit, which was last upgraded in 2005, is considered old for how it is used, and she would have more confidence that an upgraded system would provide, within proper parameters, accurate identifications without human confirmation. This upgrade is scheduled to be completed over the next three years. While acknowledging the Unit Supervisor's concerns, we continue to believe that any implementation of lights out processing, either the options we have suggested, or another that may be devised by the Unit, should attempt to reduce staff to take advantage of the improved efficiency that results from conducting 10-print processing without the use of staff fingerprint examiners. The move to 10-print processing would be particularly important if, at some future date, a substantial percentage of staff were not LFE Is, but LFE IIs, whose skills and pay level should merit focusing as much as possible on latent fingerprint analysis, particularly given the backlogs discussed in Section 3 of this report, and devoting less of their time to the 10-print function.

The Impact of Mobile ID Systems on the 10-Print Function

As discussed earlier in this section, San Bernardino County is one of the counties that uses lights out 10-print processing for a portion of its 10-print function, as it reported in response to our survey of fingerprint agencies in the 10 largest counties. San Bernardino County also reported that it has only 1,300 10-print requests annually, in terms of 10-prints that were submitted for identification purposes, without any other identification having previously been made. "We have implemented a highly successful Mobile ID program that searches our AFIS as well as DOJ (the California Department of Justice fingerprint database)," the County's Supervising Latent Print Examiner explained. "By the time a subject is booked, his identity is already known in most cases."

In addition, San Bernardino County operates a Fast ID program during the intake process for new arrestees entering the jail. This process, which occurs prior to formal booking, also identifies many individuals prior to formal submission of 10-prints.

Both of these systems use new mobile technology to allow fingerprint-based identifications of individuals in the field by law enforcement officers. The San Bernardino County mobile system, called the Integrated Biometric Identification System, which is used to take a picture of the individual, as well as a thumbprint. The device then sends both images via wireless telephone technology to the local AFIS system for comparison with the fingerprint and mug shot database. If the information submitted matches information in the AFIS database, the individual's name, date of birth and identification number are returned to the reporting location. The Fast ID system uses a desktop version of the Mobile ID technology that has been installed in local police stations and the County jail.

San Bernardino County is one of a number of California counties that have deployed mobile and remote fingerprint identification technology that relies on less than a full 10-print to make identifications. San Joaquin County, which is using a lights out approach for all of its 10-print processing, also is using a mobile system, called Live ID. That system relies on a technology called BlueCheck, in which an individual places the thumb and index finger of one hand on a handheld scanner, and the fingerprint images are transmitted to the County's AFIS system for comparison. When matching fingerprints are found in the system, what is returned is a mug shot for the identified individual, their name and other identifying information. "Our jail is set up where every local law enforcement agency is to fingerprint and identify the individual before they hit our booking station," the County's supervisor for evidence technician staff explained.

BlueCheck systems are also being used in Los Angeles County, by both the Los Angeles County Sheriff's Department and the City of Los Angeles Police, and in Santa Cruz County, where a dozen units were distributed to four local police departments and the Sheriff's Department for a two-year pilot project.

Santa Clara County is in the process of implementing mobile fingerprinting technology. During the exit conference for this audit, the Operations Support Services Division Program Manager, to whom the Central Identification Unit Supervisor reports, stated that 85 mobile handheld fingerprinting devices were being obtained for the Cal-ID program, and would be distributed to various law enforcement agencies. The Central Identification Unit's Network Engineer is assisting with this project, which would provide a similar system to that in San Bernardino County to patrol officers,. This fingerprint technology would be deployed as an addition to the existing E-Ticket system that allows patrol officers in San Jose to prepare citations electronically. According to a report to the City Council last September, remote fingerprint matching has been used by San Jose police officers since May 2009, and since October 2009 has included the ability to provide, in response to a fingerprint taken in the field by a patrol officer, a mugshot, if available, of the individual whose print was matched, to provide a

visual identification in the field. As this technology is deployed, the San Jose Police Department should evaluate the frequency with which individuals who are ultimately booked into the County Jail are identified in the field, prior to their 10-prints being taken. To our knowledge, this has not yet been done, even though mobile fingerprint technology has been in use by San Jose patrol officers for nearly two years. The success of this technology should allow the existing 10-print function to ultimately be scaled back from the current around-the-clock staffing pattern.

CONCLUSION

Analysis of workload based on a 35-day sample of 10-print requests during Calendar Year 2009 showed that the heaviest workload periods were during business hours on weekdays, and at night on Fridays and Saturdays. Current staffing schedules do not fully optimize 10-print function staffing in relation to these peak workloads. By allowing for lights out processing of 10-prints and not staffing the 10-print function during low workload volume early morning hours, and adjusting shift schedules as recommended in this section, staffing would be better optimized in relation to workload, and one Latent Fingerprint Examiner I position could be eliminated, resulting in salary savings of $62,713 annually, plus additional benefit savings. Furthermore, mobile fingerprint identification technology, which has been implemented in other counties and has resulted in identifications occurring without needing a full 10-print verification, may also permit further reductions in the eight 10-print staffing positions in the future. This should be monitored as mobile identification technology is implemented in Santa Clara County.

RECOMMENDATIONS

It is recommended that the San Jose Police Department Central Identification Unit:

1.1 Implement a revised staffing model, as recommended in this Section, providing 10-print processing using a lights out system without human fingerprint review during low workload volume early morning hours. (Priority 1)

1.2 Eliminate one Latent Fingerprint Examiner I position, based on the revised staffing structure proposed in this Section. (Priority 1)

1.3 Monitor the implementation of mobile fingerprint identification technology, to determine how many arrestees are identified prior to jail booking, and adjust 10-print processes and staffing accordingly, if mobile identification permits. (Priority 2)

SAVINGS, BENEFITS AND COSTS

The revised staffing pattern recommended in this Section provides a higher proportion of staffing during peak workload periods than does the existing staffing pattern. Eliminated one Latent Fingerprint Examiner I position results in salary savings of $62,713, plus additional savings in benefits. If implementation of mobile fingerprint identification technology permits additional staffing reductions, because identifications occur without the need for a full 10-print review, each staffing position eliminated would generate an additional $62,713 in salary savings, assuming the mid-range salary for the classification, plus additional savings in benefits.

Staffing by Hour of Day Existing Staff Versus Proposed Staffing			
		Proposed	Proposed
	Existing	20-Hour	Combo 8-10 Hr.
Sunday			
12:00 a.m.-12:59 a.m.	3	2.5	3.5
1:00 a.m.-1:59 a.m.	2	2.5	2
2:00 a.m.-2:59 a.m.	1.5	2.5	2
3:00 a.m.-3:59 a.m.	1.5	3	2
4:00 a.m.-4:59 a.m.	2	3	2
5:00 a.m.-5:59 a.m.	2	1.5	0
6:00 a.m.-6:59 a.m.	2	0	0
7:00 a.m.-7:59 a.m.	1	1	0
8:00 a.m.-8:59 a.m.	1	1	0
9:00 a.m.-9:59 a.m.	1	1	2
10:00 a.m.-10:59 a.m.	1	1	2
11:00 a.m.-11:59 a.m.	0.5	0.5	2
12:00 p.m.-12:59 p.m.	1	1	1.5
1:00 p.m.-1:59 p.m.	1	1	1.5
2:00 p.m.-2:59 p.m.	2	1	3
3:00 p.m.-3:59 p.m.	2	1	3
4:00 p.m.-4:59 p.m.	1.5	1	3
5:00 p.m.-5:59 p.m.	1	1.5	3
6:00 p.m.-6:59 p.m.	0.5	2	1.5
7:00 p.m.-7:59 p.m.	1	2	1.5
8:00 p.m.-8:59 p.m.	1.5	2	2
9:00 p.m.-9:59 p.m.	2	2	2
10:00 p.m.-10:59 p.m.	2	1.5	1.5
11:00 p.m.-11:59 p.m.	1.5	1.5	2
	35.5	37	43

Staffing by Hour of Day Existing Staff Versus Proposed Staffing			
Monday			
12:00 a.m.-12:59 a.m.	1.5	2	1
1:00 a.m.-1:59 a.m.	0.5	2	1
2:00 a.m.-2:59 a.m.	1	2	1
3:00 a.m.-3:59 a.m.	1	2	0.5
4:00 a.m.-4:59 a.m.	1	0	0
5:00 a.m.-5:59 a.m.	1	0	0
6:00 a.m.-6:59 a.m.	2.5	0	0
7:00 a.m.-7:59 a.m.	2	3	0
8:00 a.m.-8:59 a.m.	2	3	2.5
9:00 a.m.-9:59 a.m.	2	3	3
10:00 a.m.-10:59 a.m.	1.5	2.5	3
11:00 a.m.-11:59 a.m.	2	2.5	2.5
12:00 p.m.-12:59 p.m.	1.5	3	2.5
1:00 p.m.-1:59 p.m.	2	2.5	2.5
2:00 p.m.-2:59 p.m.	3	3	4
3:00 p.m.-3:59 p.m.	3	3	4
4:00 p.m.-4:59 p.m.	2	3	3
5:00 p.m.-5:59 p.m.	1	2	2
6:00 p.m.-6:59 p.m.	1	1	1.5
7:00 p.m.-7:59 p.m.	1	1	2
8:00 p.m.-8:59 p.m.	1.5	1	2
9:00 p.m.-9:59 p.m.	2	1	2
10:00 p.m.-10:59 p.m.	2	0.5	1.5
11:00 p.m.-11:59 p.m.	1.5	1	2
	39.5	44	43.5

Staffing by Hour of Day Existing Staff Versus Proposed Staffing			
Tuesday			
12:00 a.m.-12:59 a.m.	1.5	1	1.5
1:00 a.m.-1:59 a.m.	1	1	1
2:00 a.m.-2:59 a.m.	1	1	1
3:00 a.m.-3:59 a.m.	1	1	1
4:00 a.m.-4:59 a.m.	1	0	0
5:00 a.m.-5:59 a.m.	1	0	0
6:00 a.m.-6:59 a.m.	2.5	0	0
7:00 a.m.-7:59 a.m.	2	3	0
8:00 a.m.-8:59 a.m.	2	3	2.5
9:00 a.m.-9:59 a.m.	1.5	3	3
10:00 a.m.-10:59 a.m.	1.5	2.5	3
11:00 a.m.-11:59 a.m.	2	2.5	2.5
12:00 p.m.-12:59 p.m.	2	3	2.5
1:00 p.m.-1:59 p.m.	2	2.5	2.5
2:00 p.m.-2:59 p.m.	3	3	3
3:00 p.m.-3:59 p.m.	3	3	3
4:00 p.m.-4:59 p.m.	2	3	2
5:00 p.m.-5:59 p.m.	1	2	2
6:00 p.m.-6:59 p.m.	1	1	2
7:00 p.m.-7:59 p.m.	1	1	2
8:00 p.m.-8:59 p.m.	2.5	1	2
9:00 p.m.-9:59 p.m.	3	1	1.5
10:00 p.m.-10:59 p.m.	3	0.5	1.5
11:00 p.m.-11:59 p.m.	3	1	2
	44.5	40	41.5

Staffing by Hour of Day Existing Staff Versus Proposed Staffing			
Wednesday			
12:00 a.m.-12:59 a.m.	2.5	1	2
1:00 a.m.-1:59 a.m.	1.5	1	2
2:00 a.m.-2:59 a.m.	1.5	1	2
3:00 a.m.-3:59 a.m.	2	1	1
4:00 a.m.-4:59 a.m.	2	0	0
5:00 a.m.-5:59 a.m.	2	0	0
6:00 a.m.-6:59 a.m.	3	0	0
7:00 a.m.-7:59 a.m.	2	3	0
8:00 a.m.-8:59 a.m.	2	3	1.5
9:00 a.m.-9:59 a.m.	2	3	2
10:00 a.m.-10:59 a.m.	1.5	2.5	2
11:00 a.m.-11:59 a.m.	1.5	2.5	2
12:00 p.m.-12:59 p.m.	2	3	1.5
1:00 p.m.-1:59 p.m.	2	2.5	1.5
2:00 p.m.-2:59 p.m.	3	3	2
3:00 p.m.-3:59 p.m.	3	3	2
4:00 p.m.-4:59 p.m.	2	3	1.5
5:00 p.m.-5:59 p.m.	1	2	2
6:00 p.m.-6:59 p.m.	1	1	2
7:00 p.m.-7:59 p.m.	1	1	2
8:00 p.m.-8:59 p.m.	2.5	1	2
9:00 p.m.-9:59 p.m.	3	1	1.5
10:00 p.m.-10:59 p.m.	3	0.5	1.5
11:00 p.m.-11:59 p.m.	3	1	2
	50	40	36

Staffing by Hour of Day Existing Staff Versus Proposed Staffing			
Thursday			
12:00 a.m.-12:59 a.m.	2.5	1	2
1:00 a.m.-1:59 a.m.	1.5	1	2
2:00 a.m.-2:59 a.m.	1.5	1	2
3:00 a.m.-3:59 a.m.	2	1	1
4:00 a.m.-4:59 a.m.	2	0	0
5:00 a.m.-5:59 a.m.	2	0	0
6:00 a.m.-6:59 a.m.	3	0	0
7:00 a.m.-7:59 a.m.	2	3	0
8:00 a.m.-8:59 a.m.	2	3	1.5
9:00 a.m.-9:59 a.m.	2	3	2
10:00 a.m.-10:59 a.m.	1.5	2.5	2
11:00 a.m.-11:59 a.m.	1.5	2.5	2
12:00 p.m.-12:59 p.m.	2	3	1.5
1:00 p.m.-1:59 p.m.	2	2.5	1.5
2:00 p.m.-2:59 p.m.	3	3	2
3:00 p.m.-3:59 p.m.	3	3	2
4:00 p.m.-4:59 p.m.	2	3	1.5
5:00 p.m.-5:59 p.m.	1	2	2
6:00 p.m.-6:59 p.m.	1	1	2
7:00 p.m.-7:59 p.m.	1	1	1.5
8:00 p.m.-8:59 p.m.	2.5	1	2
9:00 p.m.-9:59 p.m.	3	1	2
10:00 p.m.-10:59 p.m.	3	0.5	1.5
11:00 p.m.-11:59 p.m.	3	1	1.5
	50	40	35.5

Staffing by Hour of Day Existing Staff Versus Proposed Staffing			
Friday			
12:00 a.m.-12:59 a.m.	2.5	1	2
1:00 a.m.-1:59 a.m.	1.5	1	2
2:00 a.m.-2:59 a.m.	1.5	1	2
3:00 a.m.-3:59 a.m.	2	1	1
4:00 a.m.-4:59 a.m.	2	0	0
5:00 a.m.-5:59 a.m.	2	0	0
6:00 a.m.-6:59 a.m.	3	0	0
7:00 a.m.-7:59 a.m.	2	0	0
8:00 a.m.-8:59 a.m.	2	0	1.5
9:00 a.m.-9:59 a.m.	2	1	2
10:00 a.m.-10:59 a.m.	2	2	2
11:00 a.m.-11:59 a.m.	2	2	2
12:00 p.m.-12:59 p.m.	1.5	2	1.5
1:00 p.m.-1:59 p.m.	1.5	1.5	1.5
2:00 p.m.-2:59 p.m.	3	1.5	2
3:00 p.m.-3:59 p.m.	3	2	3
4:00 p.m.-4:59 p.m.	3	2	2.5
5:00 p.m.-5:59 p.m.	1	2	1
6:00 p.m.-6:59 p.m.	1	2	2.5
7:00 p.m.-7:59 p.m.	1	5	2.5
8:00 p.m.-8:59 p.m.	2.5	3	3
9:00 p.m.-9:59 p.m.	3	3	3
10:00 p.m.-10:59 p.m.	3	3	3
11:00 p.m.-11:59 p.m.	3	2.5	2.5
	51	38.5	42.5

Staffing by Hour of Day Existing Staff Versus Proposed Staffing			
Saturday			
12:00 a.m.-12:59 a.m.	2.5	2.5	2.5
1:00 a.m.-1:59 a.m.	1.5	2.5	2
2:00 a.m.-2:59 a.m.	1.5	3	2
3:00 a.m.-3:59 a.m.	2	3	2
4:00 a.m.-4:59 a.m.	2	3	1
5:00 a.m.-5:59 a.m.	2	1.5	0
6:00 a.m.-6:59 a.m.	2	0	0
7:00 a.m.-7:59 a.m.	1	0	0
8:00 a.m.-8:59 a.m.	1	0	0
9:00 a.m.-9:59 a.m.	1	0	1
10:00 a.m.-10:59 a.m.	1	1	1
11:00 a.m.-11:59 a.m.	0.5	1	1
12:00 p.m.-12:59 p.m.	1	1	1
1:00 p.m.-1:59 p.m.	1	1	0.5
2:00 p.m.-2:59 p.m.	3	0.5	1
3:00 p.m.-3:59 p.m.	3	1	2
4:00 p.m.-4:59 p.m.	2.5	1	2
5:00 p.m.-5:59 p.m.	2	1	2
6:00 p.m.-6:59 p.m.	1.5	1	2.5
7:00 p.m.-7:59 p.m.	1.5	4	2.5
8:00 p.m.-8:59 p.m.	4	3.5	3
9:00 p.m.-9:59 p.m.	4	3	3
10:00 p.m.-10:59 p.m.	4	3	3
11:00 p.m.-11:59 p.m.	4	3	2.5
	49.5	40.5	37.5
	320	280	279.5

Section 2. An Additional Safeguard for Latent Print IDs

Background/Problem

- **The San Jose Police Department Central Identification Unit currently only routinely assigns three latent fingerprint examiners (one primary examiner and two verifying examiners) to homicide cases, or to cases where the primary examiner and the initial verifier do not reach agreement on the conclusion of the examination. By contrast, fingerprint units in other counties surveyed in California reported also assigning three examiners (adding a second verifying examiner) to cases where the identification is based on a single latent fingerprint image whose identification was solely the result of a match reported by the county's Automated Fingerprint Identification System (AFIS).**

Adverse Effect

- **By not providing this additional review that other counties have employed, the Central Identification Unit is not providing an additional level of scrutiny to the circumstance where the risk of an erroneous identification is greatest. This is particularly important given recent high profile instances of erroneous identifications in the United States and abroad.**

Recommendations

- **By following other counties in providing a second verifying examiner for identifications based on a single latent image identified solely through a match reported by AFIS, the Unit will provide an additional safeguard against erroneous identifications. This additional safeguard is a logical extension of other good practices the Unit has adopted for documenting and reporting latent fingerprint identifications, and will provide maximum assurance of the accuracy of the Unit's reported conclusions.**

Identification Using Latent Prints

Latent prints are fingerprints or palm prints or barefoot footprints left on surfaces or objects found at crime scenes. When a surface is touched or an object handled, the deposition of natural oils from the skin results in a transfer of the raised "friction ridges" that make up a fingerprint onto the surface or object. Using various chemical and other techniques, law enforcement officers or evidence technicians can make these images visible and transfer them from the original object or surface to another medium that permits them to be studied.

A Latent Fingerprint Examiner then can compare the details of a latent fingerprint or palm print with friction ridge information from a known source identified to a particular individual, usually the 10-print fingerprint and palm print records discussed

in Section 1. To the extent that ridge information in a latent print matches that in the known print source, called an exemplar, the Latent Fingerprint Examiner can offer expert testimony in court stating that the latent print was made by a particular individual. This permits that individual to be identified as being present at the location from which a latent fingerprint or palm print was obtained, or as having handled a piece of evidence from which the prints were obtained. Latent print analyses are also used to specifically exclude an individual from having been present at a crime scene, or having handled a piece of evidence. This use of latent fingerprints makes them key a source of evidence in the investigation and prosecution of crimes.

The clarity of latent fingerprints may be affected by the surface from which they were obtained, the temperature or moisture content of the skin that deposited the prints, the pressure with which a surface was touched or an object handled, or other factors. Latent print images also often consist of only a portion of a fingertip or a palm.

The process that a Latent Fingerprint Examiner uses in determining whether a latent print can be identified to a particular individual is known as "ACE-V," for analysis, comparison, evaluation and verification, and includes the following steps:

Analysis—The analysis step determines whether the latent prints include enough friction ridge information to attempt a comparison with a known fingerprint source. This includes evaluating the clarity of the print, as affected by the material upon which the print has been deposited, the method used to develop the image of the print from its original source, pressure distortion from the fingers, the condition of the skin, the presence of blood, grease or other external elements, and other factors. It also includes evaluating the quantity and quality of the fingerprint information available. Ideally, the print would include sufficient information to identify a particular shape that is regularly found. Examples of such shapes are arches, whorls (a shape in which the print is dominated by a circular image) and loops (in which the print is dominated by an upside down u-shaped structure. It is also preferable to know the direction, left or right, in which these structures flow in the print. Beyond the print's overall shape, the examiner is looking for an abundance of particular features in the friction ridges that can be compared to the exemplar print. The three most important feature types are ending ridges, where a ridge line on the fingerprint stops, bifurcations, where a single ridge line splits into two lines, and dots, short lengths of ridges that are not connected to their surrounding images. If multiple latent prints are available for comparison, the examiner will typically look at several of them, seeking the ones that are the clearest and/or have the most ridge information available.

Comparison—The comparison step is just that, comparing the latent print image with an exemplar print image from a known source, usually a 10-print record. This includes evaluating the quality of the exemplar print being used for comparison. The examiner is

looking for an overall similar shape to the latent and exemplar print, if enough information is available in the latent to determine that, and for individual ridge features, ending ridges, bifurcations and dots, that are in the same relative locations to each other in the latent print and the exemplar. Comparisons are usually made by looking at both the latent print and the exemplar using powerful magnifying glasses. They can also be made by creating electronic versions of both the latent print and the exemplar, and putting them side-by-side on a high-resolution computer monitor for comparison.

Evaluation—Evaluation is the step at which a Latent Fingerprint Examiner must determine whether there is sufficient matching friction ridge information between the latent print and the exemplar to determine that the latent print came from the same individual to whom the exemplar print is identified, and that there are no unexplainable differences between the latent print and the exemplar. The three potential conclusions of the evaluation process are to make an identification of the latent print to the known individual that is the source of the exemplar, to exclude the individual that is the source of the exemplar as the source of the latent print, or to determine that the assessment is inconclusive, that neither of the other two conclusions can be definitively supported. Currently, neither statutory nor case law in the United States, nor any professional guidelines for latent fingerprint examiners, specify how many points of comparison between a latent print and an exemplar print must match before an identification can be made. Instead, that decision is left to the judgment of the individual examiner, based on their training and experience, and taking into account all the friction ridge information examined for a particular latent print or set of latent prints, the clarity of the print, the uniqueness of the print's characteristics, and other factors.

Verification—All latent fingerprint assessments, including the determination that submitted latent prints do not match the exemplar used for comparison, are verified by having a second Latent Fingerprint Examiner independently repeat the analysis. In the San Jose Police Department Central Identification Unit, verification is always carried out by one of the Senior LFEs, who are certified as latent fingerprint examiners by the International Association for Identification, as is one of the LFE IIs. The verifier must be certified, if the primary examiner is not. In instances in which there is not agreement between the primary and verifying latent fingerprint examiner, a third examiner is required to repeat the analysis, or to the Unit Supervisor reviews the case, to resolve the lack of agreement. In addition, Unit policies require prints in all homicide cases to have a primary examiner and two verifying examiners, all of whom must independently arrive at the same conclusions for those conclusions to be presented by the Unit. The verification process is an independent and separate repetition of the analysis, comparison and evaluation steps by a different latent fingerprint examiner.

In the Central Identification Unit, analyses of latent fingerprints arise in one of three ways:

- A law enforcement officer will submit latent fingerprints to the Unit for analyses, asking for the prints to be compared to exemplar prints of a particular individual identified by the officer. The evidence is usually submitted in an envelope, which has the case number, the charge and other identifying information, and which usually has a sketch made by the officer showing from where the latent print was obtained, such as the location of the print on a car door. This information helps the Latent Fingerprint Examiner determine which finger the print probably came from, which assists the analysis.

- In addition to suggesting particular individuals to whom a latent print should be compared, or in the absence of such known individuals, a law enforcement officer may submit latent prints and request that they be "automated," a process in which key features of the latent print are electronically marked, and the print is entered into the Automated Fingerprint Identification System. Unit staff will identify any friction ridge information on the submitted prints that is automatable and automate them. Using the logarithms discussed in Section 1, the AFIS system then reports back a list of potential candidates to whom the latent print can be further compared for identification purposes. Not all prints are sufficiently clear or have sufficient ridge information to be processed into AFIS.

- Latent prints that are automated into the AFIS system, but are not matched by the system to any known individuals, remain in AFIS in the unsolved latent file. As discussed in Section 1, when new 10-print records are entered into AFIS as a result of jail bookings or other reasons, those new 10-prints are compared against the file of unidentified latent prints, to look for potential matches. Potential matches identified through this process are then further compared for identification purposes.

Expanding Verification of Latent Print Identifications

As noted earlier in this section, the San Jose Police Department Central Identification Unit requires verification of all latent print analyses by a second latent fingerprint examiner. However, the Unit only requires a second verification for instances where the primary examiner and the first verifier do not reach agreement, or for homicide cases.

A survey conducted by Management Audit Division staff of fingerprint units in other major California counties included a question as to when those units require a second verifying examiner. Fingerprint units in Alameda, Contra Costa, Los Angeles, Orange, Riverside, Sacramento, San Bernardino San Joaquin, and San Diego counties responded to the survey. Of those counties, Contra Costa County, Sacramento and San Bernardino counties indicated a different rationale for adding a second verifier. They reported using a second verifier in instances where an identification had been made using a single latent image, and where the exemplar used for comparison to that image was not a named individual requested by a law enforcement officer, but was instead the result of a hit on a search in the Automated Fingerprint Identification System.

In its survey response, San Bernardino County's Supervising Latent Print Examiner stated: "This policy was implemented after a discussion . . . about several high profile erroneous identifications resulting from AFIS searches that were reviewed. The most common theme was a single impression identified as the result of an AFIS search. . . . This is the highest risk scenario for erroneous ID's to occur."

The field of fingerprint examination has been strongly impacted in recent years by high-profile incidents of erroneous identifications, where latent fingerprints at a crime scene were wrongly identified to an individual who turned out, based on other evidence, not to have been the source for the prints. Such erroneous IDs are considered the most serious error a fingerprint examiner can make. The most infamous of these cases is probably the 2004 erroneous identification by Federal Bureau of Investigation fingerprint examiners of Brandon Mayfield, an Oregon resident, as the source of a latent print linked to the terrorist bombing of a train in Madrid, Spain. The single latent print was initially identified as Mayfield's through a computer match to the FBI's Integrated Automated Fingerprint Identification System. Fingerprint examiners in Spain subsequently matched the print to another individual, who was ultimately determined to be the source of the latent print.

As a result of the Mayfield case, and other erroneous fingerprint identifications that have been reported, use of fingerprint identifications as evidence presented by experts in court has been challenged in cases across the United States. So far, use of fingerprints for identification has been upheld.

However, as a result of these incidents, and a 2009 report from the National Academy of Sciences, which made numerous recommendations for improvements in fingerprint analysis and other forensic sciences, many fingerprint agencies have upgraded their procedures. This includes the San Jose Police Department Central Identification Unit. Three of its improvements are particularly noteworthy:

- Since last fall, the Unit has prepared a technical summary on latent print identifications. The summary is prepared for the impression or impressions that are used to identify an individual from the latent prints. This summary is a formal document, which includes an assessment of the quality of the latent print or prints compared for identification, and large print images of both the latent print, and the exemplar print, on which the points used to compare the prints and make the identification are plotted. The technical summary documents in detail the basis for the identification, and can be used by the examiner in court as part of their testimony to explain the process of making the identification.

- Also since last fall, the unit has changed the language it uses when testifying in court regarding fingerprint IDs. Previously, like other fingerprint examiners in the United States, fingerprint examiners in the Central Identification Unit were required to testify that they were making an identification with absolute certainty, without any possibility of error. As a result of the Mayfield case, the subsequent National Academy of Sciences report, and other instances of "look-alikes," exemplar prints that appeared to match a given latent, but in fact did not, the form of testimony has changed. Fingerprint examiners are now testifying to an identification by saying the number and quality of ridge features that match between a given exemplar and a given latent exceed the number in any look-alike situation revealed to date, and therefore are "sufficient to infer a positive identification with a degree of probability that borders on absolute certainty" that the latent came from the same source as the known exemplar. In other words, the testimony now leaves open the theoretical possibility that two individuals could have identical or highly similar fingerprints, although no instance of that has yet occurred. This approach adopted by the Unit last fall was recognized as appropriate by the International Association for Identification, the primary professional association for fingerprint examiners, in July 2010, when it passed a resolution that rescinded prior resolutions which had deemed testimony discussing the probability of an identification to constitute unprofessional conduct.

- Ideally, a fingerprint examiner would be able to testify to fingerprint identifications in the same manner as DNA experts, using actual mathematical probabilities, so that the examiner could testify that there was an "X percent" probability that a given latent print came from the same individual as the known

> exemplar, or that the chances that the latent print came from someone other than the source of the exemplar were "one in X." Such a probability-based system has not yet been developed. However, a Senior Latent Fingerprint Examiner for the Central Identification Unit has been attempting to develop such a system, in part using fingerprint experiments in which other Unit staff members participate. As part of staff training, this staff member has taught all staff a class, called "Dactyloscopy" that addresses the Mayfield case and other instances of false identifications, the potential use of statistical probability in fingerprint identification, sources of human error and bias in fingerprint identification, and other key issues in the field. The staff member has also submitted the proposed model to the International Association for Identification, the primary professional organization for fingerprint examination, for independent testing.

In San Bernardino County, the Supervising Examiner said adding a second verification to single-print identifications originally flagged by AFIS was suggested by Ron Smith, the founder of a nationally-known forensic training and consulting firm. Many Central Identification Unit staff members have taken training courses from Smith's firm. Smith worked for the FBI, the Alabama Bureau of Investigation and from 1978 until his retirement in July 2002, with the Mississippi Crime Laboratory. He was also one of the consultants on the FBI's review of the Mayfield identification error.

In an interview, Smith said San Bernardino County is among a number of clients to whom Smith has recommended the additional verification step in the past three or four years. "We felt it was a good quality control measure to add in there," he said, explaining that in some jurisdictions "what was happening is that some people would consider AFIS almost a first examiner," and would therefore be biased toward positively identifying a latent print to a candidate suggested by the system, rather than using the suggestion as the starting point for a complete analysis in which the latent fingerprint examiner, using their own expertise and judgment, compares a latent print with an exemplar. He said as the number of new 10-prints added to AFIS databases increases over time "there are more close non-matches out there than ever before."

When the current practice improvements of the Central Identification Unit were described to Smith, such as the use of a formal technical summary to document the latent fingerprint identification, and the current approach to court testimony, he said those practices are "far superior to what the majority of agencies are doing."

According to interviews and information in the Unit's procedures manual, the Unit at one time utilized this approach of a second verifier in cases of single-print identifications originally flagged by AFIS. However, the Unit ended that practice in late 2008, based on other reforms it instituted several years ago, including always using Senior LFEs as the verifier and instituting blind testing of staff using test latent prints, to

test whether staff, given a print to verify, would correctly determine that the suggested identification was not in fact correct.

However, based on the fact that other counties are doing it, and other information suggesting that it would be an example of a best practice added to the latent fingerprint identification process, we recommend that the Central Identification Unit require review by three latent fingerprint examiners, the primary examiner and two verifying examiners, of any latent fingerprint identification that is based on a single latent image, where the exemplar being compared to the latent print was suggested initially by an AFIS search, rather than as a named candidate requested for comparison by a law enforcement agency. During the exit conference for this report, the Unit Supervisor said she believes following this practice on all single-print identifications originally flagged by AFIS , in combination with the more extensive documentation requirements already required, would significantly slow work on latent print identifications, adding to the backlog of cases discussed in Section 3. We believe the additional verification should be tried for a trial period, to determine how many cases in fact would be impacted.

However, if the Unit ultimately believes it is too time-consuming to do this for all such instances, a modification would be to provide the second verifier only in instances where the quality of the latent print, as identified in the technical summary based on an A through F grade, is below a certain level. Smith endorsed this option, stating that the need for the additional verification may vary based on the quality of the print involved, including its clarity, and the amount of friction ridge information available for comparison. The Unit Supervisor also indicated she would support this approach, if using additional verification on all single-image cases is not feasible.

CONCLUSION

Although the San Jose Police Department Central Identification Unit has adopted several best practices in its field regarding documenting and testifying about latent fingerprint identifications, the Unit currently only provides a second verifying examiner for identifications in homicide cases, or in cases where the primary examiner and the initial verifier disagree on the conclusions of the latent fingerprint examination. By contrast, three other counties surveyed in California are utilizing a second verifier for identifications that are based on a single latent image, with an exemplar that was identified through an Automated Fingerprint Identification Search, rather than one for an individual suggested by the requesting law enforcement agency, based on other evidence in the case. The second verifier is also endorsed by a well-regarded expert in the fingerprint field.

RECOMMENDATIONS

San Jose Police Department Central Identification Unit should:

2.1 Adopt a policy of requiring three latent fingerprint examiners, a primary examiner and two verifying examiners, one of whom must be a Senior Latent Fingerprint Examiner, for all identifications that are based on a single latent image, with an exemplar identified for comparison through an Automated Fingerprint Identification System search, rather than by a law enforcement agency requesting the analysis, and suggesting an exemplar candidate based on other evidence. If this step is believed too cumbersome for all such cases, it should at least be done on identifications where the latent image is below a given level of quality, as defined by the Unit and reported in the technical summary prepared for all latent print identifications. (Priority 1)

SAVINGS, BENEFITS AND COSTS

Providing a second verifier on latent print identifications that use a single latent image and an AFIS-identified exemplar, rather than one identified by the requesting law enforcement agency, would provide an additional safeguard against erroneous identifications, which are the most serious error a fingerprint identification unit can make. We believe the limited number of instances where identifications are of this type would not vastly increase the verification workload and is worthwhile, given the protection provided against errors.

Section 3. Reducing the Latent Case Backlog

Background/Problem

- **Based on a Management Audit Division review of latent fingerprint assignment logs for the preceding 12 months, the San Jose Police Department Central Identification Unit in August 2010 had a backlog of approximately 1,100 latent fingerprint analysis requests that had not been assigned. The overwhelming majority of these cases, nearly 87 percent, were either burglaries or auto thefts where there was not a suspect in custody, which are the lowest priority cases for the unit. Furthermore, the few cases in the backlog with serious charges, such as homicide, represented older cases for which new evidence had been submitted as part of an ongoing investigation.**

Adverse Effect

- **Nevertheless, this backlog represents cases where a part of the investigation, fingerprint identifications, is being delayed, potentially preventing the investigation from being completed.**

Recommendations

- **The Central Identification Unit Supervisor reported that the San Jose Police Department, requested in September to identify cases submitted for fingerprint analysis that no longer need it, because they had been resolved by other means, identified about 300 cases to be removed from the backlog. Other law enforcement agencies using the Unit's latent print services should be requested to do the same, which would reduce the backlog, and also potentially reduce costs for agencies that are more aggressive in making reductions, since costs of the Unit are now being charged largely based on use of services. A similar reduction by other law enforcement agencies would reduce the overall backlog from the 1,106 cases we identified, to about 500 cases. The Unit should also should also consider permitting Latent Fingerprint Examiner I staff, at the discretion of the Unit Supervisor based on staff skills and experience, to identify cases where the submitted latent prints are of insufficient quality for analysis, which would further reduce the backlog.**

Submission of Latent Print Requests to the Central ID Unit

Requests for examination of latent fingerprint requests by the Central Identification Unit come from law enforcement officers in all county cities except for Cupertino, Monte Sereno, Saratoga and Los Altos Hills, which are served by the County of Santa Clara Sheriff's Department, which has its own latent fingerprint examiner to serve those cities, the unincorporated area, the Valley Transportation Authority and other areas where it provides law enforcement services. The Unit also may receive requests from

tasks forces comprised of federal, State and local law enforcement officers, the San Jose State University Police Department, the District Attorney's Office, and other law enforcement agencies.

Law enforcement agencies submit these requests in person, along with the associated latent fingerprint evidence, to a Unit latent fingerprint examiner (LFE). They fill out a form stating the agency and the law enforcement officer who is requesting the case, the type of case (i.e. nature of the crime, homicide, robbery, burglary, etc., usually designated by a Penal Code section reference), the agency's case number, the name, date of birth, personal file number or other identifying information for any subjects to whom the latent prints are requested to be compared, and whether a suspect is in custody.

The Unit staff member receiving the request time stamps it for when it was received, sequentially logs it into a handwritten log book, assigns a sequential Unit case number that is added to the request form, logs the case into a separate electronic case management database, and submits the case to the Unit Supervisor to assign the case to a latent print examiner. Once the case is assigned, the log is marked in a specific location with the initials of the assigned examiner, and the assignment is also entered into the electronic database. In the supervisor's absence, any of the Senior Latent Fingerprint Examiners may assign cases. Latent fingerprint examinations are carried out by the Senior Examiners or Latent Fingerprint Examiner II positions. At the time of the audit, Unit staffing included five Senior LFEs and four LFE IIs.

According to the Unit's written operational guidelines, the priority for assignment of cases is as follows:

1. Cases in trial where the defendant needs to be formally identified for purposes of sentence enhancements under the Three Strikes law. This is typically done using 10-print comparisons, not latent prints.

2. Crimes against persons, with a suspect in custody. The priority of cases, based on the charge are: homicide, rape, kidnapping, robbery, assault with a deadly weapon, family violence crime, cases where the suspect's ID is in question (confirmed via 10-print), and other violent crimes.

3. Property crimes with a suspect in custody. The priority of cases, based on the charge, is fraud, drug crimes, burglary, auto theft, questions of identity and other crimes.

4. Not-in-custody crimes against persons.

5. Not-in-custody property crimes.

In an interview in January 2010, at the start of this audit, the Unit Supervisor acknowledged that there was an existing backlog of unassigned cases, which she said dated back to August 2009. She stated that having such backlogs is not unusual for fingerprint units, and she said one reason for these backlogs is greater need to document fingerprint analyses, as discussed in Section 2 of this report, means it takes longer to complete the analyses and prepare written reports. During the period of the audit, the Unit also lost two staff members that have not yet been replaced, although filling the positions has been authorized. Both were Latent Fingerprint Examiner I positions. The result of the loss is that other non-LFE I staff, who would normally be assigned to work on latent prints, must spend time on 10-print analysis, as discussed in Section 1 of this report. The Unit Supervisor noted that there are five other staff who are eligible to retired by 2014, including two who are eligible right now, with receipt of full retirement benefits.

To assess the current state of the Unit's backlog, in August 2010, we reviewed the written case logs for the period from July 2009 through June 2010. Through this review, we documented how many cases had not yet been assigned, which law enforcement jurisdictions those cases came from, and the type of crime associated with each case, in order to determine if the Unit's stated priority for case assignments was being followed. The following table shows the breakdown of cases by charge.

Table 3.1

SJPD Central Identification Unit
Case Backload by Charge, July 2009-June 2010

Case Type	Number	Percentage
Burglary	717	64.8%
Auto Theft	242	21.9%
Grand Theft	20	1.8%
Vandalism	15	1.4%
Robbery	9	0.8%
ADW	5	0.4%
Arson	4	0.4%
Forgery	4	0.4%
Rape	1	0.1%
Other	89	8.0%
Total	**1,106**	**100.0%**

As the table illustrates, the vast majority of unassigned cases, 86.7 percent, are either burglaries or auto thefts, which are the lowest priority cases for assignment. High priority violent crimes account for only 1.7 percent of unassigned cases, and no homicides went unassigned. We also reviewed some of the unassigned high priority cases, and found that in several instances these were older cases, where a previous request for fingerprint analysis had been completed, and now an additional review was being requested, based on new potential suspects identified by law enforcement, or other new evidence.

Based on this analysis, we believe the Unit is following its internal procedures in prioritizing cases.

During the exit conference for this audit, the Unit Supervisor, and a Senior Latent Fingerprint Examiner, reported on their own assessment of the backlog, which was based on actually counting evidence envelopes that represent fingerprint analysis requests that had not yet been assigned. They reported that the backlog, whch probably included cases older than the 12-month period addressed in our review, totaled 1,986 cases as of October 2010. This compares with a backlog of only 343 cases in February 2003. They acknowledged that in any case, the backlog is substantial, and has grown over time.

Additional Steps to Reduce Backlogs

Despite the fact that the Unit is following its internal procedures in prioritizing cases, backlogs of unassigned cases represent cases where a portion of the investigation, relating to fingerprint identification, is delayed. The analysis requested of the Unit could either confirm a potential suspect by making an identification, identify a potential suspect, through fingerprint identification candidates suggested through an AFIS search and then further analyzed by a latent fingerprint analyst, or to determine that a fingerprint identification cannot be made, either because the latent print information cannot be matched to a known individual, or because the fingerprint is not of sufficient quality to attempt an analysis.

In discussions with the Unit Supervisor regarding the backlog, she reported that last September, with the support of the Operations Support Services Division Program Manager, and the Bureau of Technical Services Commander, she had requested San Jose Police Department law enforcement units that had requested fingerprint analyses that were part of the backlog to identify any cases where the analysis was no longer needed. These were defined as cases where the requestor no longer had a need for a fingerprint identification, even if one were successfully obtained. This would occur if the case had already been resolved by other investigative methods, or if the case, because of the

nature of the offense, its age, or other factors, was no longer deemed worth investigating. The Unit Supervisor said because both the Central Identification Unit and the requestors were part of the San Jose Police Department, she was supported by her superiors in making this request.

The Unit Supervisor reported that about 300 cases were removed from the backlog as a result of this request. Our review of the backlog that was created from July 2009 through June 2010 found that 548 of 1,106 cases, or 49.5 percent, were requested by the San Jose Police Department. Therefore, assuming that the September 2010 reduction of 300 cases all came from the backlog we identified, the reduction reduced the portion of the backlog attributable to SJPD by about 55 percent. Assuming a similar reduction by other jurisdictions, extended this approach to all jurisdictions could reduce our identified backlog of 1,106 cases to about 605 cases.

We recommend that the Central Identification Unit request other law enforcement agencies to whom it provides latent fingerprint services to also identify cases that could be removed from the backlog, and to provide any additional information on its priorities for which cases should be analyzed first, beyond the priorities established by the Central Identification Unit that were previously discussed. The Unit Supervisor said she has not made this request to other agencies, because they are separate law enforcement agencies with whom she does not share a chain of command, as opposed to the Central Identification Unit's status as part of the San Jose Police Department .

To address the Unit Supervisor's concern, we recommend that the request to the other agencies for help in assessing the backlog be made through the governing board for the AFIS/Cal-ID/RAN Local Policy Board. Under a memorandum of understanding entered into among the County of Santa Clara and all the cities in the County, this Board oversees local access to the California Identification System (Cal-ID), which is the California Department of Justice system for retaining fingerprint files and identifying latent fingerprints. The memorandum of understanding also governs provision of 10-print services by the Central Identification Unit to law enforcement agencies, and provides for it to provide general oversight of the fingerprint system as it is provided by the Unit to other law enforcement agencies. The Policy Board includes the District Attorney, Sheriff, a member of the Board of Supervisors, the San Jose Chief of Police (as the largest law enforcement agency in the County), a representative of the County police chiefs' association, a representative of County majors and a member at large. By presenting this issue to this panel and getting its endorsement for the request to the other law enforcement agencies, we hope other agencies will be persuaded to assist in reducing the backlog.

We also recommend that the Unit pursue other options to reduce the backlog. Currently, in addition to requests for formal fingerprint analyses by law enforcement

agencies through the County, the Unit receives packets of latent fingerprint cards from San Jose Police Department (SJPD) patrol officers that these officers have collected while on duty in connection with calls they have responded to for burglaries, auto thefts and other less serious crimes. A formal request for fingerprint analysis is not being requested on these cases. The prints are picked up daily from the Department's Patrol Unit, and a Latent Fingerprint Examiner I normally then examines them to identify which ones lack sufficient friction ridge detail for analysis, marking the envelope in which the prints are stored accordingly. The examiner also determines if there is enough information to "automate" the print by entering key features in the AFIS system to see if the system offers any potential match candidates. The examiner also marks the orientation of the print, such as putting a semi-circle atop what appears to be a fingertip, or a line underneath what appears to be a palm print.

These initial evaluations are then reviewed by a Senior Latent Fingerprint Examiner. If the Senior LFE does not agree with the trainee's evaluation of the print, they use the revised determination as a training opportunity with the less-experienced staff. Essentially, this review of latent prints, for which no formal analysis has been requested, is a low-risk entry for trainees into evaluating latent print images.

Because the existing backlog contains primarily low priority cases, but is very large in number, this report initially recommended that this practice of initial evaluations of latent print images by LFE Is be extended from only prints received from SJPD patrol officers, without a formal request for fingerprint analysis, to all latent fingerprints received that would otherwise not be immediately assigned to an analyst. This step to reduce the backlog would be particularly useful for latent prints received from jurisdictions other than the San Jose Police Department, because normal procedure is for the latent prints to be returned to the requesting department once an analysis is completed. Under the backlog, however, low priority case prints from other departments languish in the Central Identification Unit for weeks or months, until they are assigned. Our analysis of the backlog showed that about half the backlogged latent print requests were from jurisdictions other than the San Jose Police Department. Completing this initial review would allow prints from the other jurisdictions, that do not contain sufficient ridge information for analysis, to be returned to the requestor, rather than remaining in the Unit in an unassigned limbo status.

The Unit Supervisor strenuously disagreed with this proposed recommendation, stating that the initial review that is being done for non-analysis-request prints is not equivalent to an evaluation that would be done when a formal analysis is requested, and that the decision, in a formal analysis, that latent prints do not have sufficient information to be further analyzed is a conclusion in the ACE-V process that requires two experienced LFEs, and is beyond the abilities of the LFE Is who are reviewing non-request prints for training purposes.

Despite these objections, we believe that there may be situations where LFE I staff, during the latter stages of their training to become LFE IIs, who are responsible for conducting latent fingerprint analyses, can take on the limited task of evaluating prints submitted for formal analysis to determine if sufficient ridge information is present to even attempt an analyses. During the exit conference for this report, the Unit Supervisor estimated that it takes three years for an LFE I to gain sufficient experience to take the test for promotion to LFE II. In the third year of that training, we believe that LFE Is, at the Unit Supervisor's discretion, and under oversight of Senior LFEs, could take on this additional duty for latent prints where a formal request for analysis has been made.

In an interview where she discussed the backlog, the Unit Supervisor said she suspects that the backlog that existed as of August 2009 would ultimately turn out to include about 40 percent of cases where the latent print evidence submitted does not include sufficient ridge detail to attempt an analysis. A review of a sample of 100 backlogged cases, by one of the Senior LFEs, found about 10 percent of the sample were no value fingerprints. Therefore, having lower level staff, with sufficient skill, conduct this narrower level of analysis could reduce the existing backlog by 110 to 440 cases. We calculated that in Calendar Year 2009, the average number of cases assigned per examiner, among both LFE IIs and Senior LFEs, was 163 cases. Based on this standard, the current backlog equals about 6.7 work years, for one examiner.

This process of having LFE Is conduct an initial evaluation of latent prints turned in by San Jose Police Department patrol officers, but not requested for a formal analysis, was described to Management Audit Staff primarily as a training device for LFE Is. However, when an LFE I is not available to do the analysis, it is still being conducted by LFE IIs or Senior LFEs. We recommend ending the practice of backfilling this function on days where an LFE I is not available to do it, for training purposes. Instead, the packets of latent fingerprints received from patrol staff should themselves be backlogged, and only evaluated as LFE I staff has time to do so, because using more senior staff to review latent fingerprints where a formal analysis has not been requested is a poor use of their time. Furthermore, to the extent that there are periods where, because there are no LFE Is on staff, or the LFE I staff present has progressed beyond the point where the training provided by this initial evaluation function is needed, the practice should be suspended, and only resume when needed for training purposes.

CONCLUSION

Review of 12 months of case assignment logs, from July 2009 through June 2010, revealed a backlog of about 1,100 latent fingerprint cases in the San Jose Police

Department Central Identification Unit that had not yet been assigned to a latent fingerprint examiner for analysis. Based on the fact that 87 percent of these cases were either burglaries or auto thefts, and that only 1.7 percent were violent crimes, the Unit is following its own procedures in prioritizing cases. However, the backlog still represents a significant volume of criminal cases whose investigation, from the standpoint of fingerprint identification, is being delayed.

RECOMMENDATIONS

The San Jose Police Department Central Identification Unit should:

3.1 Request, through the AFIS/Cal-ID/RAN Local Policy Board, that all law enforcement jurisdictions using the Unit's latent fingerprint services review a list of cases that have been submitted for analysis, and identify those where the analysis is no longer needed, as the San Jose Police Department has done. (Priority 1)

3.2 Assign LFE Is with sufficient skill and experience, at the discretion of the Unit Supervisor, to review backlogged latent fingerprint analysis requests to determine if the submitted evidence has sufficient friction ridge information to permit an analysis to be conducted. (Priority 2)

3.3 End the current practice of having LFE IIs and Senior LFEs backfill LFE Is who are evaluating, as a training exercise, the sufficiency of latent prints that are submitted by San Jose Police Department patrol officers, but have not had a formal request made for a fingerprint analysis. Furthermore, during periods where this practice is not needed for LFE I training, it should be suspended. (Priority 2)

SAVINGS, BENEFITS AND COSTS

Based on the elimination of about 300 San Jose Police Department fingerprint analysis requests that the Department voluntarily eliminated, similar action by other law enforcement agencies to voluntarily reduce the volume of low-priority fingerprint requests awaiting analysis would reduce the overall backlog to about 500 cases, versus the 1,106 cases added to the backlog from July 2009 through June 2010.

Section 4. Developing a Formal Training Plan

Background/Problem

- **Members of the San Jose Police Department Central Identification Unit receive a combination of classroom training, primarily by attending training sessions outside the unit, plus on-the-job training provided by Senior Latent Fingerprint Examiners to more junior staff. While the training that is provided appears to be adequate, there is no formal written training plan indicating what formal classroom training staff should receive over their tenure in the Unit, nor how long one-on-one on-the-job training should last, or how mastery of skills should be demonstrated in order to permit one-on-one training and supervision to end.**

Adverse Effect

- **As a result, gaps could potentially occur in individual staff training, and there is no formal method to tailor training opportunities, such as attendance at International Association for Identification training seminars, to the needs of individual staff members. Attendance at such seminars is the most common way for Senior and Latent Fingerprint Examiner II staff to obtain the units of continuing professional education required to maintain certifications required by their job descriptions. Furthermore, the absence of formal standards to measure skills mastery may result in one-on-one supervision extending beyond the period necessary.**

Recommendations

- **By developing a formal training plan for staff, and monitoring compliance of individual members with its requirements, all staff will have the training they need to excel, without gaps, and will have formally demonstrated their mastery of job skills. The training plan should include a list of formal classroom training each staff member should receive, a description of the range of hours of one-on-one training a staff member should receive, and formal standards to demonstrate mastery of various skills in fingerprint identification. Increasing the current $12,000 budget for outside training to $25,000 would provide a small additional investment that would enhance the ability to provide outside training to staff. Requiring staff to share the results of any outside training in-house, by preparing summaries of the training received, would maximize the benefits of outside training across the Unit.**

The Importance of Training Programs

Having a proper training program in the San Jose Police Department Central Identification Unit is crucial, for two reasons. First, fingerprint analyses, both comparison of newly entered and previous 10-print images in the Automated Fingerprint Identification System and comparison of latent prints found at crime scenes to 10-print exemplars, are highly specialized technical functions requiring print examiners to apply general principles to specific situations and use their own judgment, developed through training, to make correct identification decisions. Second, most staff in the Unit get trained from scratch, starting out as Latent Fingerprint Examiner I (LFE I) staff, with limited knowledge of the profession, and progressing through 10-print training and on to training in analysis of latent fingerprint images, which allows them to progress from the LFE I to LFE II classification, and eventually to Senior LFE. Historically, most of the current Unit staff has come from other civilian jobs within the San Jose Police Department, primarily the Records Unit.

Training in the Central Identification Unit is provided via a combination of classroom instruction and one-on-one supervision. Most of the documented classroom training is provided outside the unit, by sending staff members to training sessions offered by consultants in the field, by the State or through the California division of the International Association for Identification, the primary professional organization for fingerprint examiners. There are two in-house classroom training courses. One course, called Dactyloscopy, is a 40-hour course taught by one of the Senior Latent Fingerprint Examiners. It's focus is to examine the relative rarity of various types of friction ridge features, and how that relates to current controversies over recent incidents of erroneous identifications, the prevalence of "look-alike fingerprints" and efforts to develop a probability-based fingerprint identification protocol. This class also includes experiments that are assisting the Senior LFE in the development of a probability-based fingerprint model, and includes a final exam. The other course is a course in palm print recognition training, also taught by a Senior LFE, which provides information on the areas and physiology of the palm, typical print patterns and print features of the palm, particularly geared to determine how to orient a latent palm print so that the portion of the print that is nearest the fingers is on top. This course includes print recognition and identification exercises. Management Audit staff attended this course, which lasted about 2.5 hours initially, but also has follow up sessions with individual examiners.

Staff interviewed for this audit generally described the on-the-job portion of their training similarly. A new LFE I will sit at the Automated Fingerprint Identification System (AFIS) terminal, with a Senior LFE by their side. The Senior observes while the new LFE I brings up new prints entered into the system, checks them for print quality, assesses the primary print pattern for each finger (arch, loop or whorl) for agreement

with the pattern assigned by AFIS, and then compares the new print to the candidates offered by AFIS as potential comparisons. One examiner said she typically will compare the new prints with the first five candidates offered, if at least one is a clear match, in order to catch any situations where the same set of prints has been previously incorrectly entered into the system multiple times, and will compare all 10 candidates before declaring there is no match to the new prints. This examiner said a Senior would observe at all times for the first three weeks on the job, then would gradually spend less and less time in supervision, while still being available for questions, until the LFE I was comfortable working the AFIS unit alone. The Unit Supervisor said the Unit's Network Engineer, who maintains the AFIS systems, also monitors it for processing errors, such as situations where a set of 10-prints that should generate a match in the system, based on other information, do not.

LFE Is are initially trained to do the quality print check and compare new 10-prints to candidate 10-prints provided by AFIS. A separate round of on-the-job training occurs for LFE Is to process "reverses," which are previously identified latent prints that have been entered into AFIS, and are suggested by the system as potential matches to new 10-prints that are entered. Training on fingerprint reverses occurs first and separately from training on palm print reverses. Senior LFEs will again sit with the LFE Is as they compare fingerprint reverses offered by AFIS to the new 10-prints. Training on fingerprint reverses usually occurs about a year after the LFE I starts work. After being trained on-the-job to do fingerprint reverses, LFE Is take the aforementioned palm print course, and with that as the base, do additional on-the-job training with Senior LFE supervision on palm print reverses. The process of moving from only working with 10-prints to analyzing latent prints is similar. A Senior LFE works with the trainee, giving them cases with different types of latent prints to review. The trainee completes the comparisons, and then gives them to a Senior for review. The Senior would then provide any additional instruction based on items that were missed in the comparison. In shifting to working with latent prints, LFE II trainees also receive in-house instruction in writing reports according to Unit procedures, including the new technical summary requirements discussed in Section 2. In addition to the hands-on training that occurs, and the two formal classes that are offered within the Unit, the Unit also maintains an extensive library of books on fingerprint analysis and other training materials obtained from seminars or other sources, which staff can check out to study.

As confirmation of the success of in-house training, staff moving from LFE I to LFE II status are required, at some point after they are promoted, to obtain certification as latent fingerprint examiners from the International Association for Identification (IAI). The certification process requires examiners to show at least 80 credits of IAI approved training, at least two years of full-time work experience in comparison and identification of latent prints, and successful completion of an examination that includes a true-and-false written test on the history of fingerprints, interpretation of print

patterns and latent print procedures, testing of an applicant's ability to recognize print patterns in 32 of 35 inked impressions provided, and comparison of 15 latent test prints with exemplars. The applicant must correctly identify 12 of the 15 prints, without making an erroneous identification. Certification also requires a recommendation from the District Attorney's Office, and proof that the examiner has testified in court, by producing a transcript of the testimony. In lieu of proof of testimony, the applicant can participate in an oral board test or presentation of a case for review. Examiners must be recertified every five years, and must accumulate 80 credits of continuing training over that period, as well as passing a recertification exam.

Assessing the Training Program

Management audit staff assessed both the content of training in the Central Identification Unit, as well as how the training individual examiners have received is tracked, and how training is planned.

To assess the content of training, we reviewed written training materials in the unit, including the Unit Operational Guidelines, training manuals developed for Latent Fingerprint Examiner I and Latent Fingerprint Examiner II staff, materials for the Dactyloscopy and palm print courses, manuals for operation of the AFIS system, and other written items maintained in the Unit. These materials were compared with criteria we developed for training programs from several sources, including:

- A 2009 National Academy of Sciences report that made various recommendations for improvements in forensic science practices, including training;

- A separate 2004 report on training in the forensic sciences issued by the National Institute of Justice; and,

- Training standards developed by the Scientific Working Group on Friction Ridge Analysis, Study and Technology, a working group of practitioners in fingerprint analysis, which is developing various guidelines and standards for the field and is supported by both the National Institute of Justice and the Federal Bureau of Investigation.

From these sources, we developed 85 criteria in all. Our review showed that the Central Identification Unit training, based on the written materials we reviewed, met 74 of these criteria, for an 87 percent compliance rate. We also found that areas where the criteria were not met could be easily addressed by recommendations made later in this section. For example, while the Unit is conducting blind proficiency testing of staff, a

description of that program just says testing will be done "regularly," while SWGFAST standards recommend testing annually. Testing also does not include formal documentation of evidence handling or report writing procedures. There are also no formal standards in the Unit for how long on-the-job training should last, which the National Institute of Justice report recommends, nor is there a very detailed formal system to track training that individual staff members have received. Lastly, the National Academy of Sciences report recommended that formal standards for the qualifications of instructors be followed, which is not something included in any of the Unit's policies.

To assess how training received by Central Identification Unit staff is tracked, and how training is planned, we reviewed files maintained by one of the Senior Latent Fingerprint Examiners, which are supposed to include copies of certificates that each staff member has received for training obtained outside the Unit. However, because the Senior LFE advised us that these files may not be comprehensive, and that each individual staff member was really responsible for tracking their own training, we also reviewed the curriculum vitae prepared by each examiner, which is supposed to include any training they have received, for purposes of documenting their qualifications as expert witnesses in court. Based on those two sources of information, we prepared lists of the training reported for each examiner, and provided those lists to them, asking them to provide information on any course not otherwise reported.

This analysis provided an overview of the training staff members received outside the Unit. At the time of the audit, the Unit included 18 fingerprint examiners, including the supervisor, and showed some variability from member to member in the training received, as follows:

- Of the 18 staff, 13 had participated in a basic course on fingerprint identification designed to provide the rudiments of the discipline, such as the history of fingerprints, the biological assumptions behind them (fingerprints don't change from birth to death, and no two individuals have the same fingerprints, for example), basic descriptions of fingerprint patterns (arches, loops and whorls), descriptions of points of comparison (ridge endings, bifurcations, etc.), and an overview of the analysis, comparison, evaluation and verification process. New staff generally took this course at a training center run by the California Department of Justice in Sacramento, while older staff took it locally, usually at Gavilan College. The five staff who hadn't taken this class included three staff who came to Unit from other fingerprint units, and two others for whom the omission is not explained. <u>During the exit conference for this audit, the Unit Supervisor stated that all staff in fact had received this training, including the two staff for which it was not documented in our review.</u>

- Thirteen staff also had received a more advanced latent fingerprint identification and comparison course, which expands on the material in the first course, provides more instruction on how to conduct identifications, and includes initial instruction in palm print identification. Similar to the basic course, newer staff generally received this training at the Sacramento training center, while older staff received it locally, usually at Gavilan. Of the five staff who did not report attending this type of class, one had come from another fingerprint unit, one was a first-year examiner who had not yet attended the class, one reported receiving equivalent training within the unit, although the hours were less, and two were unexplained. During the exit conference for this audit, the Unit Supervisor stated that all staff in fact had received this training, except for the first-year examiner. This included the two staff who should have received the training, based on their experience level, but for whom it was not documented in any of the information we reviewed.

- Ten staff had received training in courtroom testimony techniques. However, two LFE IIs did not receive this outside training, even though, as examiners of latent prints, they could potentially be required to testify in court. Similarly, 10 staff reported taking some sort of course in advanced palm print recognition, but one LFE II staff member had not. Palm print identification is part of working with latent print images, so this training is important for all staff carrying out this function. During the exit conference for this audit, the Unit Supervisor and the teacher of the Dactyloscopy course stated that courtroom testimony techniques are included in that course. We confirmed this by looking at the course materials, but believe it is important for staff to attend a dedicated course in this area, since courtroom testimony is not the primary focus of the Dactyloscopy course.

- Three of the nine LFE I staff had taken one or more courses on the County's Criminal Justice Information Control System (CJIC), which is the County's basic system for maintaining information on arrests, bookings, court appearances, etc. for individuals. Having a working knowledge of CJIC is useful for staff working with 10-prints, since identifying information that goes with 10-print records comes from CJIC. For example, the Personal File Number (PFN) that identifies a set of 10-prints to an individual is a number generated by CJIC, as is the CJIC Event Number (CEN) assigned to each booking or warrant issued for an individual. During the exit conference for this audit, the Unit Supervisor stated that all staff have had CJIC training, because it is necessary in order to get passwords needed to access that system. She said staff who had come to the Unit from the San Jose Police Department Records Unit had received CJIC training while in Records, while newer staff got it while in the Central Identification Unit, although the receipt of that training was not documented.

- Only nine staff had taken the Dactyloscopy course. Five Senior or LFE II staff, not counting the course instructor, and three LFE I staff had not taken the course. Given the concerns about erroneous identifications and challenges to the legitimacy of fingerprint evidence discussed in Section 2 of this report, and the clear need identified in the profession to develop a more rigorous probability-based model for fingerprint identification, all staff should take this course. During the exit conference, the course instructor stated that all staff had in fact taken the course, even though it was not documented in training records or information obtained from staff during the audit.

- Finally, 13 different staff members reported attending training sessions that were part of International Association for Identification conferences in California. The 13 staff reported attending at last 30 conference sessions. However, no information was provided by any of the staff regarding the conference topics that were presented, nor did we find copies within the unit of materials that may have been presented at the conferences, and could have been useful resources within the Unit.

In addition to this information provided in individual staff member's records of the training they had received outside the unit, several staff listed as part of their training the internal on-the-job training they received in the Central Identification Unit. The current Unit Supervisor reported this training as encompassing 640 hours of work, or about 80 eight-hour days of training, and said it was received from three different staff members who previously had worked in the Unit. By contrast, a current LFE I reported the internal training as lasting 500 hours, or 62.5 eight-hour days, and reported it as being provided by the Unit Supervisor and two of the Senior LFEs. However, neither individual provided any information about the content of the internal training. In interviews, several staff members said the in-house training is not very structured. Two of them described the training as "informal," and a third said it would be helpful to have specific tests or other milestones that indicate the amount of training a new examiner should receive in a particular area, and how the examiner can demonstrate they have mastered a given skill or set of skills, and can therefore move on to additional areas of training, and/or work more frequently on their own.

Based on the information we have analyzed, the Management Audit Division recommends that the Central Identification Unit develop a formal written training plan for staff, against which staff members can be monitored. While detailed development of the plan should be carried out by the Unit Supervisor, working in association with the Senior Latent Fingerprint Examiners who provide in-house training, we believe it should include the following elements:

- All new hires to the Unit should be required to attend the basic and the advanced fingerprint courses provided at the Department of Justice training center in Sacramento, or equivalent courses, unless they can demonstrate receiving previous similar formal training. There should be a timeline as when a new hire would attend each course, in relation to their initial hiring date.

- The range of hours of on-the-job training that staff will receive should be specified, as well as the qualifications of staff serving as trainers. Also, specific performance milestones to demonstrate mastery of a given skill should be provided. For example, LFE Is performing the initial quality control and identification function of 10-prints should be required to correctly process a certain number of 10-prints in a given number of minutes, without supervision and without receiving assistance from a supervisor. A trainee could be required to meet this standard for perhaps three work sessions in succession, to demonstrate mastery of the skill. This on-the-job performance might be supplemented with selected problems, such as presenting the trainee with a set of prints that are of lesser quality, due to biological issues with the subject's hands, and asking the trainee to correctly make the 10-print identification. Similar milestones and tests should be provided to staff that is learning to identify latent fingerprints in order to promote from LFE I to LFE II status.

- All staff attempting to progress from the LFE I to the LFE II classification should be required to attend outside training in courtroom testimony, and in advanced palm print identification.

- All staff should be required to attend the Dactyloscopy course. During the next offering of the course, lectures associated with it should be recorded electronically, preferably on video, and DVD versions of the course provided so that staff who do not work on the shift where the course is normally provided can participate. They should receive all written materials for the course, and be able to ask questions of the instructor by e-mail or by phone, to be answered during the hours the instructor normally works.

- The training plan should include the existing detailed description of the blind proficiency testing program that began earlier this year, including how the testing will be carried out, how the results will be reported, how corrective action for performance problems identified in testing will be addressed and how often testing will occur, at a minimum annually.

- In order to better track the on-the-job training that staff receives, all staff should be required to maintain individual training diaries. These diaries would record

the date of each on-the-job training session in which the staff member participated, and how long the trainer sat with them. The diary would also record, in a brief narrative (up to a page), what topics were discussed during the session and what difficulties arose as the trainee processed 10-print cases on AFIS, for example. The diary would also provide a place for the trainee to write down questions that occur during the course of training, to be answered by the trainer. The Unit Supervisor or a Senior LFE would then review the diaries periodically, perhaps weekly or biweekly, in order to more formally monitor the trainee's progress. The diary would also serve as a resource for the trainee, once training was completed, to review particularly difficult skill areas, and how the trainee ultimately approached them.

During the exit conference for this audit, the Unit Supervisor said that a significant barrier to getting additional outside training for staff is the Unit's minimal training budget of only $12,000 a year. She said that budget, because of the cost of travel and entrance fees, limits the ability to send staff to training outside the unit. We agree that $12,000 is a small training budget, given the Unit's budgeted staff of 18 positions, and the highly technical nature of its work. The Unit Supervisor said increasing the training budget to $25,000 would greatly enhance the ability to send staff to outside training, and we would support this increase, which is a minimal increased investment.

However, we also recommend that the Unit should take action to get more benefit as a group from International Association for Identification training sessions or other outside training attended by staff. We recommend that all staff who attend such sessions should be required to complete a one to two page report describing who presented the training sessions, contact information for the presenter, in case staff would like to ask follow-up questions, the training topic and the key points that were made. Any materials distributed during the training session should be appended to the session summary, which then becomes a resource for all staff to use to learn from the training that one individual attended.

Finally, the Unit should maintain a more formal system of documenting training than the file of staff training certificates now maintained. The Unit Supervisor should maintain records showing the hours of training each staff member received, and the topics of the training, so that the Unit can demonstrate compliance with training standards for all its employees to any outside parties, including the courts.

CONCLUSION

While training provided in the San Jose Police Department Central Identification Unit appears to adequately address development of key skills and learning of key topics

related to fingerprint identification, the lack of a formal training plan has led to some inconsistencies among various staff members as to the training they have received. Furthermore, some staff have indicated they would prefer training to be more formalized, including milestones they could pass to indicate when they can move from one set of skills training to another, and work with only normal supervision.

RECOMMENDATIONS

It is recommended that the San Jose Police Department Central Identification Unit:

4.1 Develop a formal written training plan as described in this section, including but not limited to the specific items listed in this section that should be included in the plan. (Priority 2)

4.2 Increase the current $12,000 annual training budget to $25,000. (Priority 1)

4.3 Require, as part of attendance at International Association for Identification training seminars, that Unit attendees prepare summaries of the training sessions they attended, appending any materials provided during the sessions, to serve as a resource for all Unit staff. (Priority 2)

4.4 Establish and maintain a complete central file documenting all training received by each employee. (Priority 1)

SAVINGS, BENEFITS AND COSTS

Development of a formal written training plan will ensure that no gaps occur in staff training, and that new staff members can progress through training to work without extraordinary supervision as quickly as possible, based on tests establishing formal mastery of key skill sets. Increasing the training budget represents a small additional investment that would increase the opportunity to obtain outside training for Unit staff. Preparing summaries of attendance at training seminars will provide an additional training resources for staff on specific topics.

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: Cal ID RAN Board and County Board of Supervisors

FROM: Christopher M. Moore Chief of Police

SUBJECT: Response to Management Audit of the San Jose Police Department Central Identification Unit

DATE: April 18, 2011

Approved Date

BACKGROUND

The purpose of the *Management Audit of the San Jose Police Department Central Identification Unit* was to "examine the operations and practices of the Central Identification Unit, and to identify opportunities to increase the Unit's efficiency, effectiveness and economy." The Santa Clara County Auditor's Office invested a significant amount of time to become familiar with the operations of the Unit, to understand the nuisances of both 10-print and latent print work, to evaluate other fingerprint programs within California, and to become aware of the many challenges facing the field of fingerprint identification.

The San José Police Department (Department) recognizes and appreciates the impact of the current financial situation on the Cal ID Program users. As such, there is general agreement with the intent of the audit to find cost savings for the program participants. However, the Department believes these recommendations require further analysis before such recommendations could be implemented.

To highlight the need for further analysis, the Department points to the National Academy of Science (NAS) Report entitled "Strengthening Forensic Science in the United States: A Path Forward."[1] The NAS Report brought attention to the difficulties facing the forensic fields. The National Academy found "…wide variability with regard to techniques, methodologies, reliability, level of error, research, general acceptability, and published material."[2] While the report acknowledges the value of forensic sciences as a viable investigative tool, the intent of the report was to call for reform.

Of particular concern to the Santa Clara County Cal ID Program are the issues of certainty and the reliability of fingerprint identification. The report acknowledges the difficulty of making identifications through imperfect prints left at a crime scene. The lower the quality of print, the more an examiner might have to rely on human interpretation. The report states, "While it is clear that friction ridge identification works well with good-quality prints, the reliability of the

[1] National Research Council. (2009). Strengthening Forensic Sciences in the United States: A Path Forward. Washington, DC.: The National Academies Press

[2] The National Research Council. (2009). Ch. 1 p. 3)

examination becomes increasingly more difficult where prints are smudged and incomplete,"[3] Consistent with the NAS Report, the most difficult for the Central Identification Unit is in the area of latent print identification. These "imperfect" prints represent the greatest potential for erroneous identification and liability for the Program participants.

To protect against error, the NAS Report makes several recommendations related to training, certification and documentation. The training and certification necessary become a competent latent fingerprint examiner is not achievable in a short period of time, nor is the experience available outside a working identification lab. While it may appear to make sense to reduce staff and eliminate a particular function of the Central Identification Unit, when training, experience and liability exposure are factored in, the recommendations may not achieve the ultimate goal efficiency, effectiveness and economy.

AUDIT RECOMMENDATIONS AND RESPONSE

The following is the Department's response to each recommendation:

1.1	Implement a revised staffing model, as recommended in this Section, providing 10-print processing using a lights out system without human fingerprint review during low workload volume early morning hours.

The Department disagrees with this recommendation. While technology makes "lights-out" booking a possibility, the current AFIS infrastructure and policies and practices would need to be upgraded for a "lights-out" operation.

The AFIS database is the foundation for all fingerprint identification services including "reverse hits" and the County Criminal Justice Information Control (CJIC). This system feeds the state and federal criminal history databases. Managing the quality of data entered into the AFIS is the key to ensuring the integrity and functionality of each of the systems noted. The proposed "lights-out" operation removes quality control from a centralized location, and places responsibility on the skills of the person rolling the 10-prints. Currently, live scan operator skill varies significantly from user agency to user agency. A concerted effort would have to be made to ensure booking officers collect high quality prints. Quality control is also dependent upon the resolution of the live scan devices and the matching technology of the AFIS to ensure a high quality database. Failure to properly manage the AFIS database will result in an increase in duplicate records requiring correction. The quality of the database will also impact the ability of the end users to capitalize on "reverse hit" matching technology.

Follow-up conversations with personnel from the counties identified in this survey resulted in a recommendation that technology be optimized by requiring the AFIS to conduct a four-finger search for "lights-out" operations. The current system only allows for a two-finger search. A four-finger search provides a greater level of quality control thereby reducing the possibility of erroneous identifications.

[3] The National Research Council, Ch. 5 p. 10)

San Joaquin County was used as an example of a 24hour "lights-out" service. The Central Identification Unit Supervising LFE spoke with Jose Ruiz, Supervisor of their Latent Print Unit. While their "lights-out" program is considered successful, there is no connection between their fingerprinting process and their booking database. Arrestees are booked based on name and date of birth. Fingerprints are submitted directly to the State where errors would be identified at a point in the future, leaving San Joaquin to address identification problems after the fact. To accomplish the required corrections, up to five personnel have been dedicated to booking corrections. Mr. Ruiz also stated there are problems with the quality of prints going into the database.

In the field of fingerprint analysis, 10-Print Technicians and Latent Fingerprint Examiners are distinct jobs. The Cal ID programs surveyed operate completely separate 10- Print and Latent Print Units. Upon its inception, the Santa Clara County Cal ID Program recognized the difficulty in hiring experienced fingerprint experts. The Program developed a plan for succession by creating three levels of Latent Fingerprint Examiners to bear graduating degrees of responsibility with the primary function being quality control over the AFIS booking processing.

It is implied throughout the audit that the San Jose Police Department LFE I is a 10-Print Technician, performing the sole function of AFIS booking identifications. The LFE I position was in fact designed as a training position, with the ability to promote to LFE II after three years of training. By virtue of experience and training status, the responsibility of AFIS bookings has been done predominately by the LFE I, however, they perform many other duties while training to become LFE IIs. These other duties are outlined in the response to Recommendation 1.2.

The Central Identification Unit is flexibly staffed: While highly unlikely, it could be entirely staffed by LFE IIs and Seniors. This approach to training and succession ensures the Unit maintains the skills required to work the more difficult latent print functions. It also provided the Unit with more certified examiners than almost all law enforcement agencies in the State of California.

The issue of the depth of "lights-out" operations will need to be explored further. While the LFE I positions are staffed in a manner to provide optimum coverage for AFIS bookings, this is not the sole consideration. Staffing is distributed over three shifts to provide the maximum use of work space and equipment in addition to providing 24 hour availability to the law enforcement agencies. Currently, the unit only has two AFIS workstations available for local latent print searches and one available for state and FBI searches. There is only one image enhancement terminal available. The more examiners on any given shift would minimize the time that each examiner could perform casework.

1.2	Eliminate one Latent Fingerprint Examiner I position, based on the revised staffing structure proposed in this Section.

The Department disagrees with this recommendation. As stated in 1.1, the LFE I positions do not just perform AFIS bookings. While bookings are the primary function, when booking activity is slow, the LFE I performs other tasks including, but not limited to:

- AFIS record corrections
- Adult/Juvenile Sealings
- 10-print case analysis and report writing
- Statistical tracking
- Hard copy file maintenance
- Training Exercises
- Question of ID AFIS searches, manual comparisons, and report writing
- Program related data entry

Additionally, the LFE I conducts AFIS automation to assist in the backlog cases of "Property-No Suspect" crimes. This work is being assigned as the LFE I develops the necessary skills to successfully make these automations.

The Central Identification Unit is preparing for a 25% attrition rate over the next three years. Four of those projected to retire are certified examiners. It is critical that the unit remain staffed with highly qualified examiners, which requires five or more years of training and experience. Eliminating positions would significantly hinder this process.

1.3	Monitor the implementation of mobile fingerprint identification technology, to determine how many arrestees are identified prior to jail booking, and adjust 10-print processes and staffing accordingly, if mobile identification permits.

The Department does agree with this recommendation. The current Mobile ID system has been developed specifically to assist officers and deputies in the field to identify persons who are not able to produce proper identification.

The Mobile ID system relies on two prints to "verify" identity. This standard is different than the standard for making identification for an arrest which leads to a criminal record. That standard, set by the FBI, is the full, rolled 10-prints discussed in Section 1 of the Audit.

The technology for Mobile ID is in various stages. While it is possible that future technology could produce the full booking set of prints in the field, it is unlikely that will be a feasible option for officers and deputies due to a variety of issues. Currently, San Bernardino County is involved in a pilot project to test a "fast ID" which relies on a preliminary identification using flat prints. This system interfaces with the state AFIS. It returns the state ID number which is then used to identify the person when the full rolled prints are collected, potentially reducing the quality control needs on the booking end of the identification.

The Central Identification Unit Supervising LFE spoke with Jim Nursall, the Supervising Latent Fingerprint Examiner for the San Bernardino County Cal ID Program as a follow-up to the audit survey. He advised that Mobile ID is used as an investigative tool and does not supersede the mandated booking process.

The current Mobile ID project development cost the City of San Jose $527,000 (Phase 1 & 2). An additional $83,000 was provided by SB 720 funds to support Phase 2. SB 720 funds also provided $644,810 to deploy this technology to the county-wide users. This project has currently unfunded future phases which will allow for communication of information to the State (CLETS and AFIS). Phases 3 & 4 are estimated at approximately $508,000. The existing project has on-going maintenance and infrastructure costs including $7200 per year for a secured broadband "pipe" and $500 per device per year ($42,500) for mobile communications. Desire to expand this and other technologies will require long-term commitment of funding.

2.1	Adopt a policy of requiring three latent fingerprint examiners, a primary examiner and two verifying examiners, one of whom must be a Senior Latent Fingerprint Examiner, for all identifications that are based on a single latent image, with an exemplar identified for comparison through an Automated Fingerprint Identification System search, rather than by a law enforcement agency requesting the analysis, and suggesting an exemplar candidate based on other evidence. If this step is believed too cumbersome for all such cases, it should at least be done on identifications where the latent image is below a given level of quality, as defined by the Unit and reported in the technical summary prepared for all latent print identifications.

The Department agrees with this recommendation. The Central Identification Unit previously performed the added quality assurance measure of utilizing three latent print examiners for single AFIS conclusions in order to further minimize the risk of generating an erroneous identification. That protocol was later abandoned due to the following quality assurance procedures put into place last year:

1. Cases with latent print identifications are worked by at least two examiners, one of which must be an IAI Certified Latent Print Examiner (previous identifications could be worked by two non-certified examiners).

2. All LPEs are subject to regular proficiency tests in the form of routine casework that incorporates best fingerprint "look-alikes" AFIS can find. (this forces LPEs to make decisions independently and not allow conclusions by the primary LPE to influence their decisions).

3. All LPEs take under consideration the largest and best amount of corresponding ridge features ever seen in a non-match as a working threshold that should be exceeded in order to establish inference for identification.

4. Cases with latent print identifications must include a "Technical Summary" by each LFE that graphically displays the quantity and quality of ridge features relied upon to form opinions and conclusions.

Although the above measures serve to provide added quality assurance to minimize the likelihood for error, the chance for LFEs to make erroneous conclusions always exists. The recommendation to have three examiners work all cases involving single AFIS conclusions, regardless of quantity and quality of latent vs. exemplars, in order to further minimize the likelihood for error, is considered inefficient, especially for cases involving fingerprints with an abundance of clear matching ridge features. However, the recommendation to have three examiners work cases involving single AFIS conclusions in which the visual clarity, ridge reliability and/or quality of agreement of impressions are "below excellent" is considered appropriate and should have minimal impact on overall case workflow and backlogs.

3.1	Request, through the AFIS/Cal-ID/RAN Local Policy Board, that all law enforcement jurisdictions using the Unit's latent fingerprint services review a list of cases that have been submitted for analysis, and identify those where the analysis is no longer needed, as the San Jose Police Department has done.

The Department agrees with this recommendation. The Central Identification Unit recommends the request that all law enforcement jurisdictions using the Unit's latent fingerprint services review a list of cases that have been submitted for analysis, and identify those where the analysis is no longer needed be submitted to the Chief of Police at each participating agency for purposes of dissemination.

3.2	Assign LFE Is with sufficient skill and experience, at the discretion of the Unit Supervisor, to review backlogged latent fingerprint analysis requests to determine if the submitted evidence has sufficient friction ridge information to permit an analysis to be conducted.

The Department disagrees with this recommendation. For purposes of quality assurance the LFE I must pass a proficiency exam that measures ability to determine whether or not submitted latent print evidence has sufficient friction ridge information to permit an analysis. Only upon successful passage of such exam the LFE I is deemed competent to perform such tasks (when a LFE I passes such exam he/she automatically promotes to the LFE II position). An LFE I with sufficient skill and experience may review backlogged latent fingerprint analysis requests (with no named subjects for comparison) to determine if the submitted evidence has sufficient friction ridge information to permit an automation to be conducted.

The LFE I positions, with sufficient skills and experience, are currently assigned to review the backlogged latent fingerprint analysis requests to determine if the submitted evidence has sufficient friction ridge information to permit an automation to be conducted in AFIS. AFIS searches that result in possible identifications are subsequently issued to two LFE IIs / Seniors for examination. AFIS searches that are conducted by a LFE I which results in no identification are issued to a Senior for review. In both cases, the final determination regarding the suitability or significance of latent print evidence is made by at least one examiner tested to competency, i.e., a LFE II or Senior.

The consequence for allowing an untested LFE I to make decisions regarding the suitability of latent fingerprints for analysis will result in false determinations, i.e., suitable latent prints will be evaluated as unsuitable for analysis, and unsuitable latent prints will be evaluated as suitable for analysis.

The Central ID Unit has conducted surveys of other agencies in an effort to identify a method for determining "value" earlier in the process. Any procedural changes would have to be fully vetted with user agencies, in particular the District Attorney's Office because "no value" findings require the same level of formal review and testimony if utilized as evidence at trial.

3.3	End the current practice of having LFE IIs and Senior LFEs backfill LFE Is who are evaluating, as a training exercise, the sufficiency of latent prints that are submitted by San Jose Police Department patrol officers, but have not had a formal request made for a fingerprint analysis. Furthermore, during periods where this practice is not needed for LFE I training, it should be suspended.

The Department disagrees with this recommendation. The information provided in the audit does not accurately represent the function. San Jose Police Officers do submit latent prints to the Central ID Unit without a formal case submission request. These cases are not reviewed by an LFE I, as discussed in 3.2, the LFE I does not have the skills to make the initial evaluation. These cases are reviewed by Senior LFEs and LFE IIs who determine if sufficient ridge detail exists for automation.

The SJPD informal cases with sufficient ridge detail are managed separately from the formal case submission. These cases are included in the total backlog count but represent the lowest priority. When automation is performed on these informal cases, it is only for training the LFE I

The cursory review is possible because the Unit maintains the evidence and, should the need arise the evidence can be more thoroughly examined based upon a formal request.

This recommendation is similar to 3.2 in that the ultimate goal is to reduce the backlog. Suspending the current informal review process will result in an increase in formal requests thereby increasing the overall backlog.

The current rate of increase of case backlogs is in large part due to the loss of experienced LFE IIs, the inability to hire experienced LFE IIs, and added quality assurance measures recently adopted by the Central ID Unit consistent with the National Academy of Science recommendations.

4.1	Develop a formal written training plan as described in this section, including but not limited to the specific items listed in this section that should be included in the plan.

The Department agrees with this recommendation. The Unit will improve on training documentation and develop formal written training. It is important to note such a plan would go through frequent revisions. Revisions are influenced by industry recommendations, evolving job responsibilities within the Unit, and changes in end-user expectations.

4.2	Increase the current $12,000 annual training budget to $25,000.

The Department agrees with this recommendation. As noted during the audit, relevant training is not always available in the local area. Costs to travel often influence training requirements.

4.3	Require, as part of attendance at International Association for Identification training seminars, that Unit attendees prepare summaries of the training sessions they attended, appending any materials provided during the sessions, to serve as a resource for all Unit staff.

The Department agrees with this recommendation.

4.4	Establish and maintain a complete central file documenting all training received by each employee.

The Department agrees with this recommendation.

The San Jose Police Department certainly understands the importance of operational efficiency, especially in light of the economic situation. The Central ID Unit has been proactively evaluating operations and services in an effort to ensure the participants receive the best value. As evidence of the on-going efforts, the City eliminated one Supervising Latent Fingerprint Examiner approximately two years ago. This position was eliminated in order to preserve the Latent Fingerprint Examiner classification in recognition of the difficulties in hiring and training entry-level examiners. The work of the second Supervising Latent Fingerprint Examiner has been absorbed by the SJPD at a cost savings to the Cal ID program participants. Additionally, the City has worked to reduce overhead costs.

The Central ID Unit will continue to work to improve efficiency and cost effectiveness but the Unit is already operating at a staffing level which is not sufficient to meet the program participant needs. The demand for services will only increase as technology, including automated AFIS “hits”, replaces traditional knock-and-talk investigations due to cuts in patrol and investigative units.

The Central Identification Unit will continue to explore new technologies to enhance the services provided. Unfortunately, technology is costly. As the Cal ID program has relied more and more on its SB 720 funds, the ability to take advantage of new technologies will significantly decrease.

CHRISTOPHER M. MOORE
Chief of Police

CMM:TB:PDT