TO: The Honorable Board of Police Commissioners
FROM: Chief of Police
SUBJECT: TRANSMITTAL OF THE GRANT APPLICATION AND AWARD ACCEPTANCE FOR THE 2010 CALIFORNIA COVERDELL PROGRAM

RECOMMENDED ACTIONS

1. That the Board of Police Commissioners (Board) TRANSMIT the grant application for the 2010 California Coverdell Program, pursuant to Administrative Code Section 14.6(a), to the Mayor, Office of the City Administrative Officer (CAO), Office of the Chief Legislative Analyst (CLA), and to the City Clerk for Committee and City Council consideration.

2. That the Board REVIEW and APPROVE this report.

3. That the Board TRANSMIT the report concurrently to the Mayor and City Council.

4. That the Board REQUEST the Mayor and City Council to:

   A. AUTHORIZE the Chief of Police or designee to ACCEPT the award of the 2011 California Coverdell Grant Program (Coverdell) funds in the amount of $290,921 from the California Emergency Management Agency, for the period of October 1, 2010 through September 30, 2011;

   B. AUTHORIZE the Chief of Police or designee to negotiate and execute the award Agreement and submit any necessary documents relative to the grant award, subject to City Attorney approval as to form and legality;

   C. AUTHORIZE the Controller to set up a grant receivable in the amount of $290,291 and establish an appropriation account, account number to be determined, within Fund No. 339, Department No. 70, for the disbursements of Coverdell grant funds;

   D. AUTHORIZE the LAPD to submit grant reimbursement requests to the grantor and deposit grant receipts in Fund No. 339, Department No. 70;

   E. AUTHORIZE the LAPD to spend up to grant amount of $290,291 in accordance with the grant award agreement.
F. AUTHORIZE the Controller to increase appropriations as needed from Fund No. 339, Department No. 70, to Fund No. 100, Department No. 70, as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Account No.</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Overtime, Sworn</td>
<td>1092</td>
<td>$6,000</td>
</tr>
<tr>
<td>Overtime, Civilian</td>
<td>1090</td>
<td>$180,000</td>
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</table>

G. AUTHORIZE the LAPD to prepare Controller instructions for any technical adjustments, subject to the approval of the City Administrative Officer, and AUTHORIZE and INSTRUCT the Controller to implement the instructions.

H. INSTRUCT the City Clerk to place on the Council Calendar on July 1, 2011, the following action relative to the 2010 California Coverdell Program:

1. AUTHORIZE the Controller to increase appropriations up to $88,600 from Fund No. 339, Department No. 70, appropriation account number to be determined, 2010 California Coverdell Program, to Fund No. 100, Department No. 70, account number and amount as follows:

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<th>Description</th>
<th>Account No.</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Overtime, Sworn</td>
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</tr>
<tr>
<td>Overtime, Civilian</td>
<td>1090</td>
<td>$84,600</td>
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**DISCUSSION**

The LAPD was awarded $290,921 by the California Emergency Management Agency for the 2010 California Coverdell Grant Program. The goal of the California Coverdell Program is to improve the quality, timeliness, and credibility of forensic science services. This grant will be used by the Scientific Investigation Division (SID) for the period of October 1, 2010 to September 30, 2011 to fund overtime and computer purchases.

Overtime will allow sworn and civilian personnel at SID to reduce the backlogs in the Narcotics Analysis Unit, Firearms Analysis Unit, and Field Investigation Unit. High volume caseload analysis requests and employee attrition contributed to the origin and growth of these backlogs. With these grant funds, the Narcotics Analysis Unit can complete casework analysis of controlled substances and meet the required 49-hour turn-around time, the Firearms Analysis Unit can reduce the backlog of non-DNA casework by 69.6 cases, and the Field Investigation Unit can process and book crime scene evidence and cases transferred from the Coroner's Office.

Furthermore, overtime funds will be used by SID to conduct research in the field of forensic firearms and toolmark identification. This study is intended to provide scientifically reviewable data to allow non-practitioners to understand the randomness of a chosen set of striae (individual characteristics) on fired bullets. A qualified team of forensic firearm practitioners will statistically quantify the randomness of a set of chosen striae on a fired bullet. This study attempts to provide a scientific basis for the individualization of toolmarks. The grant provides $274,600 in sworn and civilian overtime, of which $154,000 will be used to reduce the backlog and $120,600 for the validation study.
The grant will also be used to purchase ten computers to enable a dedicated system for network based applications training. The SID has recently made significant investments to implement a Laboratory Information Management System and a Quality Assurance Document Control System, which have improved the quality and timeliness of forensic science services. Currently, computers are borrowed from various units throughout the Division to conduct training. With grant funding, the dedicated computer network will accelerate staff development and training, and will also alleviate work disruptions. When not specifically used for training, these computers will be used as network application kiosks for use by SID personnel. The grant allocates $16,321 for computer-related equipment.

If you have any questions, please contact Police Administrator Maggie Goodrich, Commanding Officer, Information Technology Bureau at (213) 486-0370.

Respectfully,

CHARLIE BECK
Chief of Police

Attachments
March 9, 2011

Gregory Matheson, Laboratory Director
Los Angeles, City of
100 West First Street, Suite 1072
Los Angeles, CA 90012

Dear Mr. Matheson:

Subject: NOTIFICATION OF APPLICATION APPROVAL
Paul Coverdell Forensic Science Improvement Program
Award #: CQ10 08 7250, Cal EMA ID: 037-44000

Congratulations! The California Emergency Management Agency (Cal EMA) has approved your application in the amount of $290,921, subject to Budget approval. A copy of your approved subgrant is enclosed for your records.

Cal EMA will make every effort to process payment requests within 60 days of receipt.

This subgrant is subject to the Cal EMA Recipient Handbook. You are encouraged to read and familiarize yourself with the Cal EMA Recipient Handbook, which can be viewed on Cal EMA’s website at www.calema.ca.gov.

Any funds received in excess of current needs, approved amounts, or those found owed as a result of a close-out or audit, must be refunded to the State within 30 days upon receipt of an invoice from Cal EMA.

Should you have questions on your subgrant, please contact your Program Specialist.

PSVS Grant Processing

Enclosure

c: Recipient's file
Application Cover Sheet

RFA PROCESS

2010 CALIFORNIA COVERDELL PROGRAM

Submitted by:
City of Los Angeles
Los Angeles Police Department
100 W. First Street, Suite 842
Los Angeles, CA 90012
(213) 486-0389
CALIFORNIA EMERGENCY MANAGEMENT AGENCY
GRANT AWARD FACE SHEET (Cal EMA 2-101)

The California Emergency Management Agency, hereafter designated Cal EMA, hereby makes a grant award of funds to the following:

1. Grant Recipient: City of Los Angeles

hereafter designated Recipient, in the amount and for the purpose and duration set forth in this grant award.

2. Implementing Agency: Los Angeles Police Department

3. Project Title: 2010 California Coverdell Program

4. Grant Period: 10/01/10 to 08/31/11

*Select the Grant year and fund source(s) from the lists below or type the appropriate acronym in box 9. Enter the amount(s) from each source. Please do not enter both State and Federal fund sources on the same line. Add any cash match(s). Block 10G is the Grant Award total amount.

<table>
<thead>
<tr>
<th>Grant Year</th>
<th>Fund Source</th>
<th>A. State</th>
<th>B. Federal</th>
<th>C. Total</th>
<th>D. Cash Match</th>
<th>E. In-Kind Match</th>
<th>F. Total Match</th>
<th>G. Total Project Cost</th>
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10. Grand Total: $170,321

11. This grant award consists of this title page, the application for the grant, which is attached and made a part hereof, and the Assurance of Compliance forms which are being submitted. I hereby certify I am vested with the authority, and have the approval of the City/County Financial Officer, City Manager, County Administrator, or Governing Board Chair, to enter into this grant award agreement; and all funds received pursuant to this agreement will be spent exclusively on the purposes specified. The grant recipient signs acceptance of this grant award and agrees to administer the grant project in accordance with the statute(s), the Cal EMA Program Guidelines, the Cal EMA Recipient Handbook, the Federal OJP Financial Guide and Program Guidelines (if applicable), and the Cal EMA audit requirements, as stated in the applicable RFP or RFA. The grant recipient further agrees to all legal conditions and terms incorporated by reference in the applicable RFP or RFA, and agrees that the allocation of funds is contingent on the enactment of the State Budget.

12. Official Authorized to Sign for Applicant/Grant Recipient:

Name: Charlie Beck
Title: Chief of Police
Payment Mailing Address: 100 W. First St., Suite 1072
City: Los Angeles Zip: 90012
Telephone: (213) 486-0150 FAX: (213) 486-0168
Email: charlie.beck@lapd.lacity.org
Signature
Date: 11-18-10

I hereby certify upon my own personal knowledge that budgeted funds are available for the period and purposes of this expenditure stated above.

Cal EMA Fiscal Officer Date
Cal EMA Director (or designee) Date

Grant Award Face Sheet - Cal EMA 2-101 (formerly AOES 301) - (Revised 2/1/2009)
PROJECT CONTACT INFORMATION

Applicant: City of Los Angeles, Los Angeles Police Department

Provide the name, title, address, telephone number, and e-mail address for the project contacts named below. If a section does not apply to your project, enter “N/A.” NOTE: If you use a PO Box address, a street address is also required for package delivery and site visit purposes.

1. The Project Director for the project:
   Name: Gregory Matheson
   Title: Laboratory Director
   Telephone #: (323) 415-8100
   Address: 1800 Paseo Rancho Castilla
   City: Los Angeles
   Zip: 90032
   Fax #: (323) 276-1942
   E-Mail Address: b8927@lapd.lacity.org

2. The Financial Officer for the project:
   Name: Gerald L. Chaleff
   Title: Police Administrator III
   Telephone #: (213) 486-0192
   Address: 100 West First Street
   City: Los Angeles
   Zip: 90012
   Fax #: (213) 486-8727
   E-Mail Address: N2781@lapd.lacity.org

3. The person having routine programmatic responsibility for the project:
   Name: Marc Ampil
   Title: Management Analyst II
   Telephone #: (213) 486-0389
   Address: 100 West First Street, Ste 842
   City: Los Angeles
   Zip: 90012
   Fax #: (213) 486-5727
   E-Mail Address: N3172@lapd.lacity.org

4. The person having routine fiscal responsibility for the project:
   Name: Marc Ampil
   Title: Management Analyst II
   Telephone #: (213) 486-0389
   Address: 100 West First Street, Ste 842
   City: Los Angeles
   Zip: 90012
   Fax #: (213) 486-5727
   E-Mail Address: N3172@lapd.lacity.org

5. The Executive Director of a nonprofit organization or the Chief Executive Officer (e.g., chief of police, superintendent of schools) of the implementing agency:
   Name: Charlie Beck
   Title: Chief of Police
   Telephone #: (213) 486-0150
   Address: 100 West First Street
   City: Los Angeles
   Zip: 90012
   Fax #: (Area code)
   E-Mail Address: charlie.beck@lapd.lacity.org

6. The Chair of the governing body of the recipient: (Provide contact information other than that of the recipient)
   Name: Eric Garcetti
   Title: President of City Council
   Telephone #: (213) 473-7013
   Address: 200 North Spring Street, Room 475
   City: Los Angeles
   Zip: 90012
   Fax #: (213) 613-0819
   E-Mail Address: councilmember.garcetti@lacity.org

Project Contact Information Cal EMA 2-102 (Revised 4/12/2010)
Laboratory Accreditation Board

declares to all Advocates of Truth, Justice and the Law
that the management, personnel, procedures, and facilities of the
Los Angeles Police Department Scientific Investigation
Division Criminalistics Laboratory

Facilities located at
1800 Paseo Rancho Castilla
Los Angeles, California
6240 Sylmar Avenue
Van Nuys, California

have been found to meet or exceed the standards and requirements of the 2008 version of the
ASCLD/LAB Accreditation Manual, and therefore the Board of Directors grants this
CERTIFICATE OF ACCREDITATION
in the disciplines of

Controlled Substances, Toxicology, Trace Evidence, Biology,
Firearms/Toolmarks and Questioned Documents

Certificate number 191

effective date
7th day of December, 2008

expires on the
6th day of December, 2013

Ralph M. Keaton, Executive Director
Tracy Woey-Plummer, Deputy Program Manager
SIGNATURE AUTHORIZATION

Grant Award #: ______________________________

Grant Recipient: City of Los Angeles, Los Angeles Police Department
Implementing Agency: Los Angeles Police Department

*The Project Director and Financial Officer are **REQUIRED** to sign this form.

<table>
<thead>
<tr>
<th>Project Director</th>
<th>Financial Officer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gregory Matheson</strong></td>
<td><strong>Gerald L. Chaleff</strong></td>
</tr>
<tr>
<td>Signature:</td>
<td>Signature:</td>
</tr>
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<td></td>
<td>Date: 11/17/10</td>
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</tbody>
</table>

The following persons are authorized to sign for the

<table>
<thead>
<tr>
<th>Project Director</th>
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<tbody>
<tr>
<td>Greg Matheson</td>
</tr>
<tr>
<td>Signature:</td>
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</table>

The following persons are authorized to sign for the

<table>
<thead>
<tr>
<th>Financial Officer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laura Luna</td>
</tr>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Signature:</td>
</tr>
</tbody>
</table>

Signature Authorization CalEMA 2-103 (Rev. 2/1/2009)
CERTIFICATION OF ASSURANCE OF COMPLIANCE

I. Charlie Beck hereby certify that
(official authorized to sign grant award; same person as Section 12 on Grant Award Face Sheet)

RECIPIENT: City of Los Angeles

IMPLEMENTING AGENCY: Los Angeles Police Department

PROJECT TITLE: 2010 California Coverdell Program

is responsible for reviewing the Recipient Handbook and adhering to all of the Grant Award Agreement requirements (state and/or federal) as directed by the Cal EMA including, but not limited to, the following areas:

I. Federal Grant Funds

Recipients expending $500,000 or more in federal grant funds annually are required to secure an audit pursuant to OMB Circular A-133 and are allowed to utilize federal grant funds to budget for the audit costs. See Section 8000 of the Recipient Handbook for more detail.

☒ The above named Recipient receives $500,000 or more in federal grant funds annually.
☐ The above named Recipient does not receive $500,000 or more in federal grant funds annually.

II. Equal Employment Opportunity — (Recipient Handbook, Section 2151)

It is the public policy of the State of California to promote equal employment opportunity by prohibiting discrimination or harassment in employment because of race, religious creed, color, national origin, ancestry, disability (mental and physical) including HIV and AIDS, medical condition (cancer and genetic characteristics), marital status, sex, sexual orientation, denial of family medical care leave, denial of pregnancy disability leave, or age (over 40). Cal EMA-funded projects certify that they will comply with all state and federal requirements regarding equal employment opportunity, nondiscrimination and civil rights.

Please provide the following information:

Equal Employment Opportunity Officer: Gloria Grube
Title: Commanding Officer, Personnel Group
Address: 100 W. First Street, Los Angeles, CA 90012
Phone: (213) 486-4720
Email: E8547@lapd.lacity.org
III. Drug-Free Workplace Act of 1990 – (Recipient Handbook, Section 2152)

The State of California requires that every person or organization awarded a grant or contract shall certify it will provide a drug-free workplace.

IV. California Environmental Quality Act (CEQA) – (Recipient Handbook, Section 2153)

The California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 et seq.) requires all Cal EMA-funded projects to certify compliance with CEQA. Projects receiving funding must coordinate with their city or county planning agency to ensure that the project is compliance with CEQA requirements.

V. Lobbying – (Recipient Handbook, Section 2154)

Cal EMA grant funds, grant property, or grant-funded positions shall not be used for any lobbying activities, including, but not limited to, being paid by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the making of any federal grant, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal grant or cooperative agreement.

VI. Debarment and Suspension – (Recipient Handbook, Section 2155)

(This applies to federally-funded grants only.)

Cal EMA-funded projects must certify that it and its principals are not presently debarred, suspended, proposed for debarment, declared ineligible, sentenced to a denial of federal benefits by a state or federal court, or voluntarily excluded from covered transactions by any federal department or agency.


Coverdell grant recipients must certify with respect to any forensic laboratory system receiving any portion of the grant that a government entity exists and an appropriate written process is in place to conduct independent external investigation into allegations of serious negligence or misconduct by employees or contractors substantially affecting the integrity of forensic results.

VIII. Proof of Authority from City Council/Governing Board

The above-named organization (Applicant) accepts responsibility for, and will comply with, the requirement to obtain written authorization from the City Council/Governing Board in support of this program. The Applicant agrees to provide all matching funds required for said project (including any amendment thereof) under the Program and the funding terms and conditions of the Cal EMA, and that any cash match will be appropriated as required. It is agreed that any liability arising out of the performance of this Grant Award Agreement, including civil court actions for damages, shall be the responsibility of the Recipient and the authorizing agency. The State of California and the Cal EMA disclaim responsibility of any such liability. Furthermore, it is also agreed that grant funds received from the Cal EMA shall not be used to supplant expenditures controlled by the City Council/Governing Board.

The Applicant is required to obtain written authorization from the City Council/Governing Board that the official executing this agreement is, in fact, authorized to do so. The Applicant is also required to maintain said written authorization on file and readily available upon demand.
I, the official named below, am the same individual authorized to sign the Grant Award Agreement [Section 12 on Grant Award Face Sheet], and hereby swear that I am duly authorized legally to bind the contractor or grant recipient to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

Authorized Official's Signature:  

Authorized Official's Typed Name: Charlie Beck  

Authorized Official's Title: Chief of Police  

Date Executed:  

Federal Employer ID #: 956000736  

Federal DUNS #: 037848012  

Current Central Contractor Registration: Yes ☑ No ☐  

Executed in the City/County of: Los Angeles/Los Angeles

<table>
<thead>
<tr>
<th>AUTHORIZED BY: (not applicable to State agencies)</th>
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<tbody>
<tr>
<td>☑ City Financial Officer</td>
<td>☐ County Financial Officer</td>
</tr>
<tr>
<td>☐ City Manager</td>
<td>☐ County Manager</td>
</tr>
<tr>
<td>☐ Governing Board Chair</td>
<td></td>
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</table>

Signature:  

Typed Name: Miguel A. Santana  

Title: City Administrative Officer

All appropriate documentation must be maintained on file by the project and available for the Cal EMA or public scrutiny upon request. Failure to comply with these requirements may result in suspension of payments under the grant or termination of the grant or both and the Recipient may be ineligible for award of any future grants if the Cal EMA determines that any of the following has occurred:

(1) The Recipient has made false certification, or (2) violates the certification by failing to carry out the requirements as noted above.
PROJECT NARRATIVE

1. PROBLEM STATEMENT

The Los Angeles Police Department (LAPD) Scientific Investigation Division (SID) Criminalistics Laboratory provides forensic science services for the City of Los Angeles. Serving a population of approximately 3.9 million people, the Laboratory conducts a full array of evidence analysis and crime scene processing services for crimes being investigated by the Los Angeles Police Department. In addition, forensic services are provided on a limited basis to other local, County, State, and Federal agencies.

The Criminalistics Laboratory has been accredited by the American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) Legacy program since December 1998. The Criminalistics Laboratory was re-inspected and re-accredited by ASCLD/LAB external auditors in December 2003 and January 2009. The Laboratory also conducts internal audits for compliance with accreditation criteria on an annual basis. The laboratory is currently preparing for ASCLD/LAB International accreditation (ISO 17025) inspection commencing in the fall 2013.

The total staff of the Criminalistics Laboratory is 154 people serving a Department of approximately 10,000 officers. The number of Part I crimes reported in the City of Los Angeles in 2009 totaled 116,050 with 23,779 of those being classified as "violent" and in need of some scientific analysis.

Meeting the demands of the Los Angeles Police Department requires a well-staffed, well-trained and well-equipped forensic science laboratory. In order to provide quality service to our stakeholders, the Criminalistics Laboratory must increase efficiency wherever possible. Grant monies will be used to fund overtime and improve training for scientific staff assigned to Scientific Investigation Division.
2. PLAN

OBJECTIVE #1: IMPROVE THE QUALITY AND TIMELINESS OF CONTROLLED SUBSTANCES ANALYSIS.

Provide overtime in the Narcotics Analysis Unit to meet the requirements of the Los Angeles Judicial system for rapid laboratory analysis of controlled substances seized from felony narcotics offenders within 48 hours of arrest. The use of overtime by criminalists assigned to the Narcotics Analysis Unit (NAU) is critical to maintaining the high volume of caseload analysis requests. Without overtime funding, the caseload backlog increases by 26 cases per week.

Activities

Scientific Investigation Division plans to allocate $50,000 of the Coverdell funds for overtime use in the NAU to complete casework requests and meet the judicial system requirement of analyzing evidence from felony narcotics offenders within 48 hours of arrest. Calculated at the average hourly overtime rate of $75 per hour, the funds will allow approximately 667 hours of overtime work to be completed ($50,000/$75 per hour = 667 hours). The average narcotics analysis case takes approximately one hour to complete, therefore we project that at least 667 narcotics cases will be analyzed with Coverdell funds. The current NAU turnaround time is 24 hours. Due to imposed City furloughs, some of the employee overtime may be compensated at a lower rate (straight time instead of time and one-half) and enable a higher case return rate.

The City government in Los Angeles is currently experiencing a fiscal crisis and has reduced the availability of funds to pay for overtime. Scientific staff assigned to SID are furloughed one day out of each 10 working days. Without additional overtime funding, an average of 26 cases per week will not be analyzed in time to meet the 48-hour judicial requirements and will become a backlog for the laboratory. Each case that becomes part of the backlog will also require the re-arrest of the defendants. The grant will fund 26 weeks of overtime to analyze these time-
sensitive cases. Scientific Investigation Division will document all of the necessary information regarding the overtime funds as specified in the 2010 Recipient Handbook, Section 2171.61.

OBJECTIVE #2: REDUCE THE BACKLOG IN THE FIREARMS ANALYSIS UNIT

The Firearms Analysis Unit (FAU) carries a large backlog of 2,600 cases. The FAU is staffed by twenty criminalists and three firearms examiners. Nine of the twenty criminalists are in training to become experts and are not yet capable of performing casework. Three of the fourteen remaining fully-trained staff are full-time trainers and therefore do not contribute to casework. The eleven fully-trained case-working analysts can barely meet the demands of the current urgent caseload. They are not able to work on the unit’s growing backlog of old cases without overtime funding.

Activities

Scientific Investigation Division plans to allocate $94,000 of the Coverdell funds for overtime for the purpose of reducing the number of backlogged cases in the FAU. Calculated at the average hourly overtime rate of $75, this amount will allow approximately 1,253 hours of overtime work to be done. The average firearm analysis case takes 18 hours to complete, therefore we project a backlog reduction of at least 69 cases (1,253 hours/ 18 hours per case = 69.6 cases). Due to imposed City furloughs, some of the employee overtime may be compensated at a lower rate (straight time instead of time and one-half) and enable a higher case return rate. Scientific Investigation Division will document all of the necessary information regarding the overtime funds as specified in the 2010 Recipient Handbook.
OBJECTIVE #3: REDUCE THE BACKLOG IN THE FIELD INVESTIGATION UNIT FOR CRIME SCENE ANALYSIS.

The Field Investigation Unit (FIU) carries a backlog of 260 cases. The unit is staffed by nine criminalists and two laboratory technicians. Two of the criminalists are in training to become experts and are not yet capable of performing independent casework. One of the remaining seven fully-trained staff is a full-time trainer, and is medically exempt from casework. The six fully-trained case-working analysts can barely meet the demands of the current urgent caseload. They are not able to work on the Unit's growing backlog of old cases without overtime funding.

Activities

The Criminalistics Laboratory plans to allocate $10,000 of the Coverdell funds for overtime for the purpose of reducing the number of backlogged cases in the FIU. Calculated at the average hourly overtime rate of $75, this amount will allow approximately 133 hours of overtime work to be done. The average crime scene evidence investigation case takes 3 hours to complete, therefore we project a backlog reduction of at least 44 cases (133 hours / 3 hours per case = 44.4 cases). Due to imposed City furloughs, some of the employee overtime may be compensated at a lower rate (straight time instead of time and one-half) and enable a higher case return rate. Scientific Investigation Division will document all of the necessary information regarding the overtime funds as specified in the 2010 Recipient Handbook.
OBJECTIVE #4: IMPROVE THE EFFICIENCY OF CRIMINALISTICS LABORATORY STAFF IN-HOUSE TRAINING ON PROPER USE OF JUSTICETRAX LABORATORY INFORMATION SYSTEM, QUALTRAX DOCUMENT MANAGEMENT SYSTEM, AND OTHER NETWORK BASED APPLICATIONS

Scientific Investigation Division utilizes the JusticeTrax Laboratory Information Management System (LIMS) for evidence chain of custody tracking, analysis report writing, and many other casework management applications. The Qualtrax Document Management System has been purchased and will soon be deployed throughout the laboratory to track and update all quality assurance related manuals, corrective action reports and all additional quality related documentation. These network based information systems are critical to the efficient operation of the laboratory. Currently, whenever network applications training is required, workstations must be disassembled moved and reassembled in a training room. Moving computers on a temporary basis for training creates disruption and delay of case work analysis in the Laboratory. Staff within the Laboratory must be properly trained to use these systems effectively. Periodically the network systems are updated and staff must be given ongoing, updated training on their use.

Activities

Scientific Investigation Division plans to allocate $16,321 of the Coverdell funds to purchase 10 desktop computers with software and network cabling for the purpose of assembling a dedicated system for network applications training. Currently, whenever applications training is presented to Criminalistics Laboratory staff, computers must be borrowed from the various units throughout the laboratory for set up in a training room facility. This causes disruption of work activities in the units that contribute the computers for training. Having a dedicated group of computers for applications training will alleviate the work activity disruption as well as the need to set up the computers for each training event. When not specifically used for training, the
group of computers will be available as dedicated network applications kiosks for use by staff throughout the laboratory.
Budget Narrative

Personnel

In order to reduce current and prevent future casework backlogs, the majority of the funds requested will be used to pay for casework analysis on overtime. Funds available for overtime are extremely limited. A portion ($50,000) will provide overtime to forensic scientists assigned to the Narcotics Analysis Unit to complete casework analysis of controlled substances and meet the 48-hour turn-around time required by the judicial system for analyzing evidence from felony narcotics offenders. Another portion ($94,000) will provide forensic scientists assigned to the Firearms Analysis Unit with overtime to reduce their backlog of non-DNA casework by 69.6 cases. Additional funds ($10,000) will provide overtime to personnel assigned to the Field Investigation Unit to process and book crime scene evidence and cases transferred from the Coroner’s office.

Each portion of funds to be used for overtime is divided by the Criminalist's average hourly rate of pay for overtime, $75. The calculations are:

Narcotics $50,000/$75 per hour = 667 hours
667 hours/1 hour per case = 667 cases

Firearms $94,000/$75 per hour = 1,253 hours
1,253 hours/18 hours per case = 69.6 cases

Field $10,000/$75 per hour = 133 hours
133 hours/3 hours per case = 44.3 cases

Operating Expenses

Scientists are spending time that could be used for analysis to train and be trained on network based applications. Additional delays in casework analysis are caused as workstations are used for training and research. Scientific Investigation Division will expend $16,321 of the
Coverdell funds to purchase 10 desktop computers with software and network cabling for the purpose of assembling a dedicated system for network based applications training. When not specifically used for training, the group of computers will be available as dedicated network applications kiosks for use by staff throughout the laboratory. Workstations dedicated to training and network applications prevent timely delays in processing casework when training or other research is required.

The Criminalistics Laboratory has recently made significant investments of resources and staff time to develop and implement a Laboratory Information Management System (LIMS) and a Quality Assurance Document Control System. These systems have improved the quality and timeliness of forensic science services provided by the laboratory. To properly utilize these systems, the more than 200 scientists must be trained in their operation. The software and systems are updated and improved frequently, and staff must be given updated training. Training is provided both by laboratory staff and contracted vendors. Currently, the presentation of training updates to staff requires cobbling together 10 or more computers used for other purposes throughout the laboratory. Coverdell funds of $16,321 will be used to purchase 10 dedicated networked computers to provide an improved system for conducting staff training on these systems.
## BUDGET CATEGORY AND LINE ITEM DETAIL

<table>
<thead>
<tr>
<th>A. Personal Services – Salaries/Employee Benefits</th>
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<td><strong>Salaries</strong></td>
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<td>$94,000/$75 = 1,253 hours and 1,253 hours/18 hours per case = 96.6 cases</td>
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<tr>
<td>Overtime to complete backlogged cases - NARCOTICS</td>
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<tr>
<td>$50,000/$75 = 667 hours and 667 hours/1 hour per case = 667 cases</td>
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<tr>
<td>Overtime to complete backlogged cases - FIELD INVESTIGATION UNIT</td>
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<tr>
<td>$10,000/$75 = 133 hours and 133 hours/3 hours per case = 44 cases</td>
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**Fringe Benefits**

N/A

**TOTAL** $154,000

CalEMA 2-106b (formerly OES 303b (Revised 2/1/2009)
<table>
<thead>
<tr>
<th>B. Operating Expenses</th>
<th>COST (10 FSIA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel</td>
<td>$16,321</td>
</tr>
</tbody>
</table>

Other (training registration costs; laboratory supplies; publications; journals)

Supplies (computers; office supplies)

| 10 Desktop computers with software and installation | $16,321 |

Consultants/Contracts

| TOTAL | $16,321 |

CalEMA 2-106b (formerly OES 303b (Revised 2/1/2009))
<table>
<thead>
<tr>
<th>C. Equipment</th>
<th>COST (10 FSIA)</th>
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**Total Project Cost**

*Same as Block 10G on the Grant Award Face Sheet*

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<tr>
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CalEMA 2-106b (formerly OES 303b (Revised 2/1/2009))
Project Narrative

1. Problem Statement

The field of forensic firearms and toolmark identification is under attack in our criminal court system. Non-practitioners discredit the valuable and time-honored testimony of practitioners as lacking a sufficient and statistically derived basis for the individualization of toolmarks.

The forensic individualization of firearms and toolmarks is based on the hypothesis that toolmarks are created by microscopic irregularities that are produced during the tool's manufacture and/or subsequent wear. These irregularities (individual characteristics) are produced randomly and in combination with other general characteristics creating uniqueness from one firearm/tool to another. The data, published thus far, has been described as being too subjective, insufficient or irrelevant to scientifically prove the underlying hypothesis to the non-practitioners. Without a credible, defensible and scientific foundation for the forensic individualization of firearms and toolmarks, the testimony of forensic experts may be excluded from the courts. This testimony is crucial to the successful outcome of thousands of criminal investigations annually.

This study aims to offer scientifically reviewable data to allow non-practitioners to better understand the randomness of a chosen set of striae (individual characteristics) on fired bullets by studying the object attributes of a set of chosen striae. A uniquely qualified team of forensic firearm practitioners from the Los Angeles Police Department (LAPD) will statistically quantify the randomness of a set of chosen striae on a fired bullet. This information will tell us how rare the individual characteristics are and will help to validate the underlying hypothesis of toolmark individualization to the court. If successful, this will be the first time in the history of firearms individualization that data is collected based on object attributes using a population frequency study for a chosen set of striae.
The primary criticisms to the science of firearm and toolmark identification are the lack of proof for uniqueness (randomness of the toolmarks in the firearm barrel) and the lack of well-defined objective identification criteria. The proof for both uniqueness and identification criteria are interlinked, a reasonable approach is to establish the uniqueness by generating relevant data to quantify the randomness of the toolmark.

The absolute means to prove the uniqueness is to examine all the firearms ever manufactured in this world, which is not a feasible task. Even if it is possible, the results may only be valid temporarily because the moment new firearms become available in the market the result becomes invalid. Having valid results would be a never-ending process. The next logical step would be to use science to prove uniqueness with a scientific certainty. Firearms practitioners, historically, recognized this challenge and attempted to prove uniqueness by both theory and experiment using several empirical and theoretical studies. For example, as early as in 1959, Biasotti published a summary of a statistical study in which he studied bullets fired from 24 different 38 Special caliber Smith & Wesson revolvers. However, none of these methods was useful to prove uniqueness with any practical certainty to non-practitioners. Although firearms practitioners realize the importance of statistics, they never attempted to collect data using studies like population frequency studies because of the complex nature of the problem and the inability of the probability studies to prove uniqueness with an absolute certainty. There are several other studies to prove uniqueness to some extent but non-practitioner critics argue that these are insufficient to prove uniqueness with scientific certainty.

Apart from the theoretical models, the bulk of data from the literature, which attempts to prove uniqueness of toolmarks, are from Consecutive Manufactured Barrel (CMB) studies.
These published studies tend to support but not quantify randomness and may not prove uniqueness. As stated in the objective, randomness and uniqueness are different. In this proposal, it is our intent to prove uniqueness using randomness with a scientific certainty. By defining the randomness, the study will ascertain how random the events are, which will tell us how rare (quantifiably unique) the events are, thus proving or disproving uniqueness with a scientific certainty.

In fact, the National Research Council (NRC) discusses the "uniqueness" problem in general when they evaluate DNA evidence. It is as follows:

"The determination of uniqueness requires measurements of object attributes, data collected on the population frequency of variation in these attributes, testing of attribute independence, and calculations of the probability that different objects share a common set of observable attributes."


There is virtually no attempt to determine the uniqueness of the firearm barrels by measuring the object attributes. In this project, an attempt will be made to define the randomness of the chosen set of striae (individual characteristics) in the land impressions of the fired bullets from like barrels by studying the object attributes.

2. Plan

2.1.1 Pattern Recognition Theory

Let us say we want to find out which two of the following four diagrams are similar.
Our brain could process this in many different ways. One common way would be to compare each diagram portion by portion, using convenient reference points to mentally divide the diagram into several small segments. As the brain compares each segment, one would realize that there are repeated objects. In this example, the repeated objects are circles and ribbons. One would also notice that each object could have several properties or attributes (i.e. thickness, color, etc.) A careful study of the variations of these object attributes in each segment would lead to a conclusion.

The success of the pattern recognition of this kind lies not only in the recognition of the reference points, base objects, object attributes, but also in the recognition of the variations of the object attributes of those basic units. Let us say there are only three attributes for a
base object and each attribute has 10 different variants. We now have $1,000 \times 10 \times 10 \times 10$ different possible combinations available for each base object. Assume that the attribute values are assigned in a truly random fashion to the base objects. In order to determine the chance of occurrence of any specific object attribute value in a given base object using a population frequency study, one must observe hundreds of specimens at least, if not thousands (more depending on their population frequencies) for each of the 1,000 possible base object types. This is the basic problem in the toolmark examination. The challenge lays not only in the recognition and measurement of the attribute variants of the base objects but also in the enormity of the whole process. To define the randomness of the individual characteristics of fired bullets, one first has to recognize the base objects and their attribute values available in the fired bullets. Then, one has to do the population study for every possible combination of the attribute values in all possible base objects. The process is so cumbersome that thus far, no single person has attempted to get relevant data to define the randomness of the striae (individual characteristics) by measuring the object attribute values.

In the comparison of fired bullets, the reference points are already defined in the form of leading and trailing edges of the land impressions. Practitioners primarily have only one type of base object to consider, namely stria. Each of the fired bullet base objects has two worthwhile attributes - quality and position. The more ideal study of every possible stria available in every possible firearm would be an impossible task. In the absence of any similar data in the literature, we must start at a smaller scale to study smaller sets of striae. One way to do this is to select and study a small number of stria from the bullets fired from one type of firearm. This is the essence of this proposal. Moreover, if it is learned that the randomness of most of the characteristics is approximately equal, then we do not have to study all possible combinations. There is no single project that will help us to understand
the randomness of all possible striae, but this project (and others) will lay the foundation for a reasonable and scientific study to validate the practice of firearm and toolmark identification.

The chance of occurrence of any one or more specific stria out of the chosen set striae, at a specific location will be determined by actually comparing each chosen stria with the test specimens using the comparison microscope. Using this approach, we can restrict the basic units and the attributes of those basic units to be studied. In addition, this approach enables us to compare, instead of measure the attributes, which actually addresses two concerns. It eliminates measurement errors and allows data collection to be consistent with how firearms practitioners perform their traditional pattern matching. The method restricts the scope to the chosen attributes of the chosen basic units in the chosen reference points. Because of the enormity of the challenge in data collection, starting with the chosen attributes, basic units and reference points would be a logical starting point. This is a study to determine the chance of occurrence of any one or more specific stria out of the chosen set striae, at a specific location in one land impression.

This validation study will attempt to quantify, interpret and record the randomness of six sets of chosen striae from six different land impressions of the fired bullets. A selection of 600 different firearms will produce 600 test bullets each with six land impressions for a total of 3,600 land reviewable impressions. Each of these sets will be compared with at least 3,600 different land impressions of fired bullets. In this overall process, at least 20,000 land-to-land comparisons will be completed to obtain the data. The proposal includes 600 firearms that will be test-fired to obtain the required fired bullets to study.
Selection of the make and model of a firearm to be used in the study required careful consideration. Since we are going to select our reference points, basic units and attributes, it will be easier to collect the data if the primary firearm belongs to a group of firearms, which consistently makes distinguishable marks on the fired bullets. In addition, the firearm has to be a common one so that it is easy to get a large sample of different examples of the same firearm. The 9mm luger caliber, Beretta 92FS, semi-automatic pistol was chosen not only for the quality of the marks it reproduces on the fired bullets, but also for its availability. The pistol barrels have six lands and grooves with reasonable land and groove impression width. Here the reference points are defined by the land widths, basic units are the individual stria and the attributes are the position and the qualities of each stria like its width, contour, etc...

In each land, we can choose several well-defined basic units to study which serves as the primary base characteristics. If five to ten striae are selected, depending upon the availability, in each land, and if six land impressions are selected to study, then we can study a minimum of 30 to 60 primary basic units. Each of these units will be compared against at least 3,600 land impressions of the bullets fired from the test-firearms. In each comparison, the number of basic units, which is comparable with the primary basic units will be recorded and this data will be captured in the table shown in the next section. The proposed study of 600 firearms gives 3,600 land combinations to examine for each chosen set. If we chose six sets of striae, then, about 20,000 (6 x 3,600) total land-to-land comparisons will be completed. The proposal includes the study of the statistical significance of the chosen consecutive matching striae (CMS) by studying and comparing the probabilities of non-CMS with the probabilities of CMS.

2.2 Data Collection and Data Analysis

Each chosen stria will be compared with striae from at least 3,600 land impressions of fired bullets, fired from 600 firearms. Each primary stria studied will be named and individually
studied against the striae on test land impressions. Data for the set of chosen striae for the each selected land impression with the six land impressions of the test firearm will be captured in a form as shown below.
Sample Data Collection Form

Data collected for a set of chosen individual characteristics of a single land against the six lands of a test firearm – an example.

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<thead>
<tr>
<th>Stria #</th>
<th>TL1</th>
<th>TL2</th>
<th>TL3</th>
<th>TL4</th>
<th>TL5</th>
<th>TL6</th>
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<td>X</td>
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<td>2</td>
<td>3</td>
<td>2</td>
<td>0</td>
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<tr>
<td>MS_2C</td>
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<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
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<tr>
<td>MS_2N</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tbody>
</table>
Data will be collected by the traditional pattern matching method, used by practitioners operating with comparison microscopes, not from computer (digital) images. Also, data will be collected by the comparison - not the measurement of attributes. In other words, when we capture the data, we do not have to measure the quality of the individual stria because we are comparing and not measuring it. Since no measurements are involved with the basic units of the test bullets, measurement errors will be minimized. As mentioned above, no comparable data is available in the literature and this data will shed some light to understand the randomness of the individual characteristics. If successful, this will be the first time in the history of firearms identification that data is collected based on object attributes using a population frequency study for a chosen set of striae. Similar data will be collected for each test-fired bullet for each set of striae chosen. As more and more data is collected, the randomness values will be calculated using the cumulative data from the total number of land impressions examined. Matching striae data will be collected in land-to-land comparisons; no matching striae data spread over multi-lands will be collected.

2.3 Management Plan and Organization

Like all other metropolitan police agencies, the workload in the Firearms Laboratory exceeds capacity of the staff and there are 2,600 cases backlogged for analysis in the LAPD. In the interest of public safety, the staff must be primarily focused on criminal casework and can only participate in this study during overtime hours. To complete this project successfully, eight forensic firearm practitioners must work an estimated average of 53.6 hours per week over a period of 30 weeks for a combined team total of 1,608 hours. Eight experienced members were selected from the Firearms Analysis Unit of the LAPD based on their technical ability and experience. The Program Manager will oversee and coordinate the project on a weekly basis, organizing and assigning the work of the team members.
2.4 **Tasks**

1. Locate 600 Beretta 92FS test firearms (Davis Armory – LAPD)
2. Transport the 600 firearms to the laboratory for test-fire
3. Find and procure proper ammunition to test-fire (Winchester)
4. Finalize the tables and forms to capture the data
5. Design a robust data base to store the data
6. Generate 4 test-fired bullets from the 600 test firearms in carefully indexed containers
7. Compare test bullets with each of the chosen set of stria to find out the number of matching stria and capture the data in the proper forms
8. Capture the data into the database
9. Data analysis, project completion and delivery
10. Project Management (personnel and funds management)

**Phase I plan – 12 weeks – All costs paid by City of Los Angeles**

- Organization, developing data capture forms and data bases
- Identify 600 firearms and transport them to the laboratory to prepare for test-firing
- Generating test-fires from the 600 firearms by firing 4 rounds per firearm
- Acquire ammunition, micrometers and containers for test-fire purchase

**Phase II plan – 13 weeks – All costs paid by City of Los Angeles**

- Identifying the primary six sets of characteristics & marking and labeling the same
- Project flow finalization & members familiarizing with the project
- Design a database in Access software
Phase III plan – 26 weeks

- Generate data from the 600 firearm testifres - about 3,600 different land combinations for each chosen set of characteristics; combined total about 20,000 land-to-land comparisons will be completed.
- Organize data capture forms and enter all data into database

Phase IV plan – 4 weeks

- Perform and complete data analysis & interpretation
- Final report draft, abstract and executive summary submission

Attempts to reduce the total cost of the project

- The LAPD will cover the costs of Phase I and II—including the employees’ salaries, use of 600 firearms and 2,400 rounds of ammunition, sample packaging materials
- No outside contractors are necessary.
- Also, no outside consultants are required
- No outside fund manager; all funds will be managed by LAPD
- No separate security system needed; LAPD security will be used to protect data and test specimens.
- No need to write new protocols; test fire and comparison procedures are already in place
- No special training needed for team members; all the team members are trained and qualified to do both test fires and comparison
- No major equipment needed to be purchased; proposal uses the LAPD equipment.
2.5 **Dissemination Strategy**

Once the project is completed and the data, findings and final report will be summarized in a technical presentation to the relevant scientific community attending the annual educational conference of the Association of Firearm and Toolmark Examiners (AFTE). An article will also be prepared for publication in a scientific journal such as the Journal of Forensic Science or the AFTE Journal.

2.6 **Project Milestones**

*Phase I milestones – 12 weeks*

- Data capture forms and data bases developed
- Ammunition, micrometers and containers for test-fire purchased
- 600 firearms transported to the laboratory and prepared for testing
- Test-fires prepared from the 600 firearms

*Phase II milestones – 13 weeks*

- Forms and database design are completed
- Finalized six sets of striae identified
- Primary striae sets are photographed, labeled and distributed to team

*Phase III milestones – 26 weeks*

- Data collected from about 3,600 different land combinations for each of the six sets of chosen striae; combined total data collection from about 20,000 land-to-land combinations will be completed.
- All the captured data entered into the database.
Phase IV milestones – 4 weeks

- Completion of data analysis & interpretation
- Final report draft, abstract and executive summary submission

2.7 Implications for Criminal Justice Policy and Practice in the United States

The NRC 2009 report, built largely on the writing of academic commentators, called for significant changes in the presentation and production of evidence of identification involving firearms and other evidence. The report suggested that the firearms and toolmark discipline does not have an adequate research base developed within the culture of science. It raised profound questions that have prompted the courts to ask practitioners to offer proof that the discipline is founded on a reliable scientific methodology (pattern matching) and principles (uniqueness of a toolmark to the exclusion of all others) that gives practitioners the capacity to accurately analyze evidence and report findings.

There is no comparable data available in the literature. The data derived from this study will assist practitioners and the courts to better understand the randomness of the individual characteristics and qualify the significance of a toolmark association. This study is expected to contribute to the body of scientific knowledge that will form the foundation requested by the courts and the NRC to establish greater confidence in the reliable scientific methodology of pattern matching and the principles of toolmark identification that depend on the premise of uniqueness and individualization. If successful, this will be the first time in the history of firearms identification that data is collected based on object attributes using a population frequency study (commonly accepted in the DNA discipline) for a chosen set of striae.
3. Capabilities

The LAPD Crime Laboratory is an ASCLD/LAB accredited laboratory and abides by the tenets of a comprehensive quality system. The next page shows the organization chart for LAPD Crime Laboratory.
4. Bibliography


Budget Narrative

Personnel

This study will be accomplished by eight forensic firearm practitioners who will be working an average of 53.6 hours per week for 30 weeks, with a combined team total of 1,608 hours. Funds received through this grant program will be used to provide overtime for these practitioners since they must be primarily focused on criminal casework. A total of $120,600 is requested to provide overtime for seven civilian practitioners and one sworn practitioner. The breakdown of this follows:

Civilian: $105,750
   7 persons * 6.7 hours/week * 30 weeks * $75/hour/person

Sworn: $14,850
   1 person * 6.6 hours/week * 30 weeks * $75/hour/person

Operating Expenses

There are no operating expenses for this grant.

Equipment

There are no equipment purchases for this grant.
### A. Personal Services – Salaries/Employee Benefits

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<td>Overtime for seven civilian practitioners</td>
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<tr>
<td>7 persons * 6.7 hr/week * 30 weeks * $75/hr/person = $105,750</td>
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<tr>
<td>Overtime for one sworn practitioner</td>
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<td>1 persons * 6.6 hr/week * 30 weeks * $75/hr/person = $14,850</td>
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CalEMA 2-106b (formerly OES 303b (Revised 2/1/2009))
## BUDGET CATEGORY AND LINE ITEM DETAIL

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<tr>
<td>Other (training registration costs; laboratory supplies; publications; journals)</td>
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<td>Consultants/Contracts</td>
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**TOTAL** $0
### BUDGET CATEGORY AND LINE ITEM DETAIL

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*Same as Block 10G on the Grant Award Face Sheet*
# PROJECT SUMMARY

1. **GRANT AWARD NO.**  
   CQ10087250

2. **PROJECT TITLE**  
   Paul Coverdell Forensic Sciences Program

3. **GRANT PERIOD**  
   10/01/2010 to 08/31/2011

4. **APPLICANT**  
   Name: City of Los Angeles, LAPD  
   Phone: (213) 486-0389  
   Address: 100 West First Street, Suite 842  
   Fax #: (213) 486-5727  
   City: Los Angeles  
   Zip: 90012

5. **GRANT AMOUNT**  
   $170,321  
   (this is the same amount as 10G of the Grant Award Face Sheet)

6. **IMPLEMENTING AGENCY**  
   Name: Los Angeles Police Department  
   Phone: (213) 486-0389  
   Fax #: (213) 486-5727  
   Address: 100 West First Street, Suite 842  
   City: Los Angeles  
   Zip: 90012

7. **PROGRAM DESCRIPTION**  
   Eligibility is restricted to CA forensic science laboratories, ME's and coroners. Applicants must certify that they are accredited (or seeking) with a forensic crime laboratory organization such as ASCLD. Applicants must have an in-house laboratory performing scientific analysis in one or more qualifying disciplines. Applicants must have a written process in place regarding external investigations into alleged negligence or misconduct that could adversely affect the integrity of forensic results. These funds are used to improve the function of the criminal justice system. The goal of the program is to improve the quality, timeliness, and credibility of forensic science services over current operations. This program permits funding for on-going educational and/or training and developmental needs, overtime for the reduction of backlogged cases and equipment.

8. **PROBLEM STATEMENT**  
   Forensic services are provided to the City of Los Angeles and on a limited basis to other local government agencies. The current population of the city is approximately 3.9 million people. The laboratory has been accredited by ASCLD since 1998 and was re-inspected and re-accredited in December 2003 and January 2009. The total staff is 154 persons, serving a Department of 10,000 officers. The number of Part I crimes reported in 2009 was 116,050 with 23,779 of those being classified as "violent." Accurate and timely analysis requires a well-staffed, well-trained and well-equipped forensic science laboratory. It is necessary to validate newer, modern instruments and the methods supporting them before they can increase analyst productivity. Funds will also be used for overtime to eliminate and prevent backlogs for requested scientific analysis of narcotics, firearms and crime scene investigations.

9. **OBJECTIVES**  
   The average hourly overtime rate of pay for criminalists is $75 per hour. With the projected grant award, it is estimated that the following number of cases may be analyzed for the respective disciplines:  
   - **Narcotics** $50,000/$75 = 667 hours and 667 hours/1 hour per case = 667 cases  
   - **Firearms** $94,000/$75 = 1,253 hours and 1,253 hours/18 hours per case = 69.6 cases  
   - **Crime Scene** $10,000/$75 = 133 hours and 133 hours/3 hours per case = 44.3 cases  
   Additional monies will be used to provide training on the use of case load tracking systems.
10. ACTIVITIES
Narcotics analysis will be performed by qualified staff with a required turnaround time of 48 hours. Firearms analysis will be conducted to eliminate ongoing backlogs and crime scene investigations will be completed on an overtime basis to prevent the increase in backlogged cases.

11. EVALUATION (if applicable)
The volume of cases completed is tracked by project management staff within the lab. Turnaround time and efficiency of the scientific analysis process is reviewed and improved upon whenever possible.

12. NUMBER OF CLIENTS
10,000 sworn officers serving a population of 3.9 million persons

13. PROJECT BUDGET
(these are the same amounts as on Budget Pages)

<table>
<thead>
<tr>
<th></th>
<th>Personal Services</th>
<th>Operating Expenses</th>
<th>Equipment</th>
<th>TOTAL</th>
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Project Summary - CalEMA 2-150 (formerly OES 227) (Revised 2/1/2009)
# PROJECT SUMMARY

1. **GRANT AWARD NO.**

2. **PROJECT TITLE**
   Paul Coverdell Forensic Sciences Program

3. **GRANT PERIOD**
   10/01/2010 to 08/31/2011

4. **APPLICANT**
   Name: City of Los Angeles
   Phone: (213) 486-0389
   Address: 100 West First Street, Suite 842
   Fax #: (213) 486-5727
   City: Los Angeles
   Zip: 90012

5. **GRANT AMOUNT**
   (this is the same amount as 10G of the Grant Award Face Sheet)
   $120,600

6. **IMPLEMENTING AGENCY**
   Name: Los Angeles Police Department
   Phone: (213) 486-0389
   Fax #: (213) 486-5727
   Address: 100 West First Street, Suite 842
   City: Los Angeles
   Zip: 90012

7. **PROGRAM DESCRIPTION**

   The Firearms Laboratory of the LAPD is comprised of 39 staff and is recognized as one of the most experienced, progressive and innovative labs in the country. More than 40,000 items of firearms evidence are examined each year in this lab. Very few laboratories examine this volume of evidence and fewer yet employ as many experienced examiners as the LAPD Firearms Lab. These circumstances make the LAPD uniquely qualified to complete a project of this magnitude in such a time-efficient manner. However, workload in the Firearms laboratory exceeds its capacity, where the backlog for analysis is 2,600 cases. To complete this study, forensic scientists will participate in this study during overtime hours only so that the lab can continue to focus on its primary services.

8. **PROBLEM STATEMENT**

   Non-practioners of forensic firearms and toolmark identification continue to discredit the individualization of toolmarks based on the lack of credible data and research. This has prompted the courts to ask practitioners to offer proof that the discipline is founded on a reliable scientific methodology (pattern matching) and principles (uniqueness of a toolmark to the exclusion of all others) that gives practitioners the capacity to accurately analyze evidence and report findings. Firearms practitioners attempted to prove uniqueness using several empirical and theoretical studies. Studies by the Consecutive Manufactured Barrel supported but not quantified randomness which may not prove uniqueness.

9. **OBJECTIVES**

   This proposal aims to prove uniqueness for a subset of the 9 mm firearms universe by proving how frequently or rarely the land impression striae from 3600 land impressions match (in spatial relationship, contour and width) a select set of chosen striae in the master set of striae.

   The frequency of these events will provide measurable data to support or refute the theory of uniqueness in striated toolmark examination by pattern matching methodology.

   Data will be generated from 600 firearm testfires - about 3,600 different land combinations, with a combined total about 20,000 land-to-land comparisons will provide data necessary to calculate the frequency of comparably similar striae from a large sample of firearms by analysts with similar and substantial experience.
10. ACTIVITIES
Practitioners will perform microscopic comparison of a selected set of striae on select land impressions to thousands of variable striae present on 3600 land impressions (6 land impressions on 600 fired bullets = 600 land impressions). The comparison will evaluate the spatial position, width and surface contour of the variable striae (on the 3,600 land impressions) in relation to the selected ~6 sets of chosen striae for a total of (6 x 3,600) ~21,000 land to land comparisons. The resulting data will be compiled and provide information that will quantify the number of instances where land impression striae of similar spatial position, width and surface contour are observed for this subset of 9 mm Beretta firearms. The project will result in a population frequency study for like striae on land impressions in this particular firearm subset. It will serve as benchmark study for others to follow in order to create the type of population frequency data and projections used in DNA studies to prove individualization and uniqueness.

11. EVALUATION (if applicable)
The data is captured in real time and is tracked by project management staff within the lab. Efficiency of the scientific analysis process is reviewed and improved upon whenever possible.

12. NUMBER OF CLIENTS
(if applicable)
10,000 sworn officers serving a population of 3.9 million persons

13. PROJECT BUDGET
(These are the same amounts as on Personal Operating Services Expenses Equipment TOTAL
Budget Pages)

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Project Summary - CalEMA 2-150 (formerly OES 227) (Revised 2/1/2009)
Complete this form to report the total funds available to support the activities related to accomplishing the goals and objectives of the Grant Award Agreement. In the “Grant Funds” column, report the CalEMA funds requested by category. In the “Other Funds” column, report all other funds available to support the project by category and then calculate the totals by category in the “Program Total” column. Total each column to arrive at the total program funds available.

### OTHER FUNDING SOURCES

(Enter numbers without $ or decimal points.)

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This form does not become part of the grant award.
### PRIOR CURRENT AND PROPOSED CalEMA FUNDING

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PROJECT SERVICE AREA INFORMATION

1. **COUNTY OR COUNTIES SERVED:** Enter the name(s) of the county or counties served by the project. Put an asterisk where the project’s principal office is located.

   City of Los Angeles, Los Angeles County*

2. **U.S. CONGRESSIONAL DISTRICT(S):** Enter the number(s) of the U.S. Congressional District(s) which the project serves. Put an asterisk for the district where the project’s principal office is located.

   Districts 26, 27, 28, 30, 31, 32, 33, 34*, 35 36, 37, 39 and 46.

3. **STATE ASSEMBLY DISTRICT(S):** Enter the number(s) of the State Assembly District(s) which the project serves. Put an asterisk for the district where the project’s principal office is located.

   Districts 37, 38, 39, 40, 41, 42, 43, 44, 45*, 46, 47, 48, 50, 51, 52, 53, 55, and 59.

4. **STATE SENATE DISTRICT(S):** Enter the number(s) of the State Senate District(s) that the project serves. Put an asterisk for the district where the project’s principal office is located.

   Districts 17, 19, 20, 21*, 22, 23, 24, 25, 26, 28, 29 and 30.

5. **POPULATION OF SERVICE AREA:** Enter the total population of the area served by the project.

   Approximately 3,900,000 persons
Currently, when network systems training is required for laboratory personnel, computers must be borrowed from the various units throughout the division. This causes disruption and delay of work activities in the units that contribute the computers for training. Having a dedicated group of computers for applications training will alleviate the work activity disruption as well as the need to move, and set up and return the computers for each training event. When not specifically used for training, the group of computers will be available as dedicated network applications kiosks for use by staff throughout the laboratory again preventing delay of casework analysis when non-analytical duties must be performed.

Scientific Investigation Division utilizes the JusticeTrax Laboratory Information Management System (LIMS) for evidence chain of custody tracking, analysis report writing, and many other casework management applications. The Qualtrax Document Management System has been purchased and will soon be deployed throughout the laboratory to track and update all quality assurance related manuals, corrective action reports and all additional quality related documentation. Network based information systems are critical to the efficient operation of the laboratory. Staff within the laboratory must be properly trained to use these systems effectively. Periodically these systems are updated and staff must be given ongoing, updated training on their use.

Scientific Investigations Division plans to purchase 10 desktop computers with software and network cabling for the purpose of assembling a dedicated system for network based applications training.
CALIFORNIA EMERGENCY MANAGEMENT AGENCY  
PUBLIC SAFETY AND VICTIM SERVICES  

FY 2010 Paul Coverdell Forensic Science Improvement Grants Program  

Certification as to External Investigations  

On behalf of the applicant agency named below, I certify the following to the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice and to the California Emergency Management Agency:  

A government entity exists and an appropriate process is in place to conduct independent external investigations into allegations of serious negligence or misconduct substantially affecting the integrity of the forensic results committed by employees or contractors of any forensic laboratory system, medical examiner's office, coroner's office, law enforcement storage facility, or medical facility in the State that will receive a portion of the grant award.  

I agree to notify Cal EMA Coverdell Program Staff at the initiation, duration of, and at the conclusion of any and all complaints and/or allegations of serious negligence and/or misconduct substantially affecting the integrity of forensic results committed by employees or contractors of the forensic laboratory system.  

I have personally read and reviewed the section entitled “Eligibility” in the FY 2010 program announcement for the Coverdell Forensic Science Improvement Grants Program. I acknowledge that a false statement in this certification or in the application that it supports may be subject to criminal prosecution, including under 18 U.S.C. §1001. I also acknowledge that the Office of Justice Programs and/or California Emergency Management Agency grants, including certifications provided in connection with such grants, are subject to review by the Office of Justice Programs, Department of Justice, Office of the Inspector General, and the California Emergency Management Agency.  

I have authority to make this certification on behalf of the applicant agency (that is, the agency applying directly to the California Emergency Management Agency).  

[Signature]  
Signature of Certifying Official  

Chief of Police  
Title of Certifying Official  

City of Los Angeles, Los Angeles Police Department  
Name of Applicant Agency  

Mark Perez  
Name of External Investigative Agency  

Deputy Chief  
Title  

213 473-672  
Phone #  

[Date]  
1-18-10