



## City of Palo Alto City Manager's Report

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TO: HONORABLE CITY COUNCIL

FROM: CITY MANAGER DEPARTMENT: POLICE

DATE: NOVEMBER 8, 2004 CMR:462:04

SUBJECT: APPROVAL OF A BUDGET AMENDMENT ORDINANCE (BAO) TRANSFERRING \$200,000 FROM THE TECHNOLOGY FUND INTO THE POLICE VEHICLE-MOUNTED VIDEO RECORDING CAPITAL IMPROVEMENT PROGRAM PROJECT NUMBER PD-05010 FOR THE PURCHASE AND INSTALLATION OF IN-CAR VIDEO RECORDING SYSTEMS IN POLICE PATROL VEHICLES

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### RECOMMENDATION

Staff recommends that Council adopt the attached Budget Amendment Ordinance (BAO) that transfers \$200,000 from the Technology Fund into the Police Vehicle – Mounted Video Recording Systems Capital Improvement Program Project #PD-05010 for funding the purchase of hardware and installation for in-car video recording systems in all 26 police patrol vehicles.

### BACKGROUND

Video technology has become instrumental in law enforcement training, evidence collection, and for officer safety and accountability. Staff's interest in in-car video recording systems began in 1996 (CMR:494:96) with the installation of a video camera in one police vehicle by a local provider in exchange for feedback on the performance of the product. This public/private partnership led to a 1998 pilot program using Citizen Options for Public Safety (COPS) funds (CMR:461:98) that resulted in the purchase of video cameras and recorders for five patrol vehicles.

Although the Department had secured the equipment as part of this pilot program, staff identified a number of technological issues that required further research before deploying

these units. One of the most significant issues dealt with the recording format and vast amount of storage space and staff time that were needed to store and catalog individual VHS tapes for the one-year minimum retention period prescribed by law. These issues have since been addressed with the emerging transition from analog to digital technology. This report provides information about the proposed use of video cameras in patrol vehicles.

### DISCUSSION

Police departments throughout the United States are realizing the value of video recording of officer-citizen contacts in the field, citizen transports, criminal investigations and citizen complaints. Almost 50 law enforcement agencies in California and hundreds across the Country are already using in-car video systems. They have realized a number of benefits including increased conviction rates, reduced time for court proceedings and litigation, increased officer safety, reduction in unwarranted lawsuits and complaints, officer accountability and usefulness in training.

Digital systems have several advantages to analog. Analog systems require VHS tapes, which can degrade over time and require additional personnel time to manage, maintain and store the tapes. Digital systems utilize a different format for recording. Digital Video Display (DVD) disks are smaller and the video can be archived onto a server for indefinite storage. Access to any portion of the recording is immediate and video clips are easier and less expensive to copy. Many new digital systems come with a "pre-event recording" feature. This feature automatically captures a preset amount of video prior to recorded activation. If an officer witnesses an event prior to activating the recording device, such as a car running a red light, the video evidence is automatically captured and recorded. Utilizing security features inherent to this newer technology, images are stored and secured for reproduction only; the original recordings cannot be altered. As with other official police records, the Department will utilize a custodian of records to manage these recordings.

Staff recommends funding the installation of a digital in-car video system in each of the 26 patrol vehicles. Each system will include a zoom lens camera, audio transmitter, monitor, controller, and recorder. A server and software will be purchased to easily store, search and copy video, and audio files.

Due to space limitations on the existing police motorcycles, these in-car video systems will be deployed first in the patrol vehicles. However, as the current motor fleet is replaced, the

newer models, which utilize smaller radio and data components, will be equipped with in-car video systems as well.

Pending the approval by the City Council, staff is prepared to move forward with the purchasing process by releasing a Request for Proposal (RFP) seeking competitive pricing based on specific technical requirements and services. Upon selection of a vendor following the formal bid process, the Bid Award Contract will be returned to the City Council for final approval. Currently, the Department is working with the Palo Alto Police Officers Association (PAPOA) on the development of a use policy for in-car video systems, researching vendors and working through procedural issues.

#### **RESOURCE IMPACT**

The attached BAO (Attachment A) reflects an increase in revenues and expenditures of \$200,000 into the Police Vehicle – Mounted Video Recording Systems Capital Improvement Program PD-05010 by a transfer from the Technology Fund. Ongoing equipment maintenance at an annual cost will be budgeted in the Police Department operating budget and replacement costs will be budgeted in the Information Technology (IT) Infrastructure Fund. Ongoing and replacement costs will be provided to Council as part of the Bid Award process.

#### **POLICY IMPLICATIONS**

This agreement is consistent with existing City policy.

#### **TIMELINE**

The project will begin as soon as possible and should be complete within 120 days.

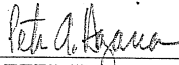
#### **ENVIRONMENTAL REVIEW**

This ordinance and the project to install in-car video recording systems, is not subject to CEQA pursuant to Title 14 California Code of Regulations Section 15061(b)(3), and it can be seen with certainty that there is no possibility of a significant effect on the environment.

ATTACHMENTS

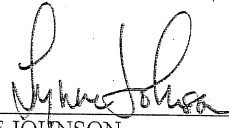
Attachment A: Budget Amendment Ordinance  
Attachment B: CIP PD-05010 Project Description

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## ATTACHMENT B



### Police Vehicle - Mounted Video Recording Systems New — Technology

#### PROJECT DESCRIPTION

Video technology has become instrumental in law enforcement training, evidence collection, and for officer safety and accountability. This project will equip 26 police vehicles with a digital in-car video system. Each system will include a zoom lens camera, audio transmitter, monitor, controller, and recorder. In addition, a server and software will be purchased to easily store, search and copy video and audio files.

#### PROJECT JUSTIFICATION

Police departments are realizing the value of video recording of officer-citizen contacts, citizen transports, and probable cause related questions. Benefits of in-car video systems are increased conviction rates, less time in court proceedings and litigation, increased officer awareness of their conduct, training situations and reinforcement, and easier understanding by all parties of recorded situations.

With the advent of digital technology, in-car video recording systems are becoming standard equipment in police vehicles. Digital in-car video recording systems have several advantages over the previous generation of analog in-car video systems. Analog systems require VHS tapes, which can degrade over time and require additional personnel costs to manage, maintain and store the tapes. Digital systems require fewer mediums to store. DVD disks are smaller and the video can be archived onto a server for indefinite storage. Access to any portion of the recording is immediate and video clips are easier and less expensive to copy. Many new digital systems come with a "pre-event recording" feature. This feature automatically captures a preset amount of video prior to recorded activation. If an officer witnesses an event prior to activating the recording device, such as a car running a red light, the video evidence is automatically captured and recorded.

#### PROJECT STATUS

This is a new project in FY 2004-05.

#### FUTURE FINANCIAL REQUIREMENTS

FISCAL YEAR	AMOUNT	COMPONENTS
2004-05	\$200,000	Zoom lens cameras, audio transmitters, monitors, controllers, recorders, software.
2005-06		
2006-07		
2007-08		
2008-09		

Sources of Funding: Technology Fund



Date: June 1, 2005

Subject: Addendum Number ONE to City of Palo Alto Request For Quote (RFQ) Number 112015

Project Title: Mobile Audio Video (MAV)

Department: Police

Bid Opening Date: 3:00 PM, Tuesday, June 7, 2005

Please note the following changes, corrections, and clarifications that are hereby incorporated to the requirements of the IFB:

Palo Alto PD has a fleet of 26 vehicles. We have 5 start times throughout the day with patrol officers on 11 hour shifts – at any given time there are between 4 up to a max of 10 vehicles on the street at any given time.  
We anticipate 3 hours of recording per shift.  
We will retain the files for 2 years.

The Bid Opening Date of 3:00 P.M. Tuesday, June 7, 2005 remains unchanged.

A handwritten signature in cursive script, appearing to read "Carolynn Bissett".

Carolynn Bissett  
Contract Administrator  
City of Palo Alto

Cc: Sheryl Contois, Project Manager

**MOBILE AUDI VIDEO (MAV) SYSTEM  
CITY OF PALO ALTO  
POLICE DEPARTMENT**

**SCOPE OF WORK and BID SPECIFICATIONS**

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The City of Palo Alto is seeking proposals from qualified Bidders to provide a minimum of twenty-six (26) mobile audio video (MAV) systems capable of digitally capturing and recording audio and video of police activities initiated from marked patrol vehicles. The proposed system shall contain the below listed minimum features and functionality. The proposal shall include the following: a plan, timeline, a complete description of equipment including brand, model and type; all related costs for equipment, training of department personnel in the operation of the equipment; manufacturers warrant information for a warranty period of up to 36 months from the date of purchase; repair and maintenance costs within and outside the warranty period; and a

The purpose of this specification is to establish a minimum standard of quality for the City of Palo Alto's MAV program. This specification covers a video system designed to provide an audio and video recording of various patrol activities, including but not limited to: traffic stops, vehicle pursuits, DUI stops and other related patrol activity.

The manufacturer must be in full commercial production of the proposed product – no "pre-production" products will be considered. The manufacturer must be able to provide references of departments with such systems. This agency also reserves the right to have the digital video system examined by any other qualified agency, for acceptable design, construction, fabrication and assembly methods. Vendors must be able to provide a White Paper establishing its technology has undergone rigorous testing by an independent and relevant scientific body.

**SCOPE OF WORK**

These specifications cover a Mobile Audio Video (MAV) system that shall consist of a mounted miniature camera, digital video recorder mounted in a protective case, control center, wireless microphone and transmitters to provide remote audio recordings and a software system to track and manage the MAV recordings.

**MAV System – General Features:**

1. The MAV system shall have a miniature camera of a CCD type (with black and white recording) and shall record both forward and backward (in the passenger rear seat compartment). The camera must be capable of operating in extreme weather conditions. In no instance shall it obstruct the driver's field of view.
2. The high-security, environmentally controlled video digital recorder mounted in a protective case or master unit shall be self-contained, sealing out dust and humidity. The master unit shall be located in the vehicle trunk or in another agency specified location in such a manner as to protect the integrity of the digital recordings. The master unit shall use appropriate equipment to control the vault's internal temperature.
3. The system shall use an integrated operating system located in the main electronic system and/or in the control center.
4. Video authentication is required and shall be provided by impeding a time stamp in the digital recording. The time stamp shall be recorded in a proprietary format that cannot be duplicated as

to ensure that any attempts to alter the video are detected. Proprietary software designed to detect and reveal alterations to the video file shall be supplied.

5. The control center shall provide the operator the ability to review recorded segments and shall provide protection to recordings to ensure they are not recorded over. The control center shall be mounted within ease reach of the driver's seat and the control devices shall be clearly marked and easy to use.
6. The wireless microphones should allow audio recording of events both inside and outside the vehicle.
7. The wireless microphone transmitters shall incorporate a tone encoded signal to minimize external interference to the receiver unit.
8. All cable and hardware required for complete installation shall be supplied.
9. The mobile audio video system and wireless transmitters shall conform to the minimum standards of the Federal Communications Commission (FCC) rules and regulations.
10. The mobile audio video system recorded digital video images shall be immune to RF transmissions.
11. Active record-over protection.
12. The Record function must be activated by pushing the manual record button on the system controller, activating emergency lights and siren, or remotely from the wireless audio transmitter.
13. The recorded digital video images must be free of any RF transmission interference or vehicle generated interference.
14. When the system has been powered up and is operating in the ready standby mode, the recording function shall initiate immediately when the Record button is activated and shall provide a pre-event recording buffer of a minimum of 30 seconds, and up to 10 minutes. This pre-event buffer must have the flexibility to be user defined.
15. Two wireless microphone transmitters shall be supplied with each of the twenty-six (26) systems.
16. A color monitor is required as part of the MAV system package.
17. The MAV system shall not interfere with the vehicle's electrical or electronic components, including the police radio system, mobile data computers, speed detection devices, through electromagnetic radiation or radio frequency interference produced by the camera, Recording device, or system controller or its components.
18. The MAV system shall be protected from damage due to input or voltage, reverse polarity, and electrical transients that may be encountered.
19. All programmable parameters shall be contained in non-volatile memory. Loss of power to the system shall not result in the unit requiring reprogramming.

#### **Compact High Sensitivity Color CCD Camera**

1. The camera dimensions shall not exceed 7" in length and 2.75" in width.



2. The camera shall be a single unit including power lens.
3. The camera shall operate on 12v DC and should offer a minimum of 470 lines of horizontal resolution. The camera shall operate on a power source that is filtered, regulated, and short circuit protected. The voltage supplied to the camera shall meet the camera manufacturer's specifications and shall not vary with fluctuation of the system's electrical system voltage of between 9 and 18 volts.
4. The camera shall also offer low light capability with a minimum illumination of 1 lux (.3 lux is preferred).
5. The camera shall contain a lens with at least a minimum of 10X optical zoom lens and 4X digital zoom for a total zoom ratio of 40:1. The camera shall provide a horizontal view of at least 17 feet at a distance of 20 feet from the camera.
6. The auto iris lens shall automatically adjust for varying light levels from day to night.
7. The camera shall be equipped with light control which turns backlight on or off as not to illuminate when the user is in darkened conditions.
8. The CCD color camera shall prevent glare and light blooming during operation.
9. The camera shall include auto and manual focus capabilities, backlight compensation and a signal to noise (S/N) ratio of better than 50 db.
10. The camera shall not warp or distort under normal conditions.
11. The camera shall contain the video system's external record/microphone indicator. This indicator shall consist of an LED located on the front of the camera's housing to indicate to the operator outside the vehicle that the system is recording.
12. The camera shall be mounted on a heavy-duty controlled step-pivot mount. The camera mount should have a mounting bracket allowing the camera to be mounted to the headliner above the windshield. The camera mount should have the ability to easily rotate 180 degrees without having to adjust any knobs or connections.
13. The mount shall allow the camera and lens to swing away on impact by a passenger in an accident.
14. The camera shall provide both automatic and manual focus capabilities, which are user selectable.
15. The camera shall minimize any protruding connectors, which could cause physical injury to someone in the event of an accident.
16. The rear facing black & white camera shall include an array of infrared LED's to allow the camera to record back-seat-suspect activities in darkness. The LED array shall be capable of illuminating the entire back seat area of a patrol car.

**Video Monitor:**

1. The monitor must be a high-quality color LCD monitor of at least 3" (but not greater than 6") diagonally measured.
2. The display must be of the LCD Active Matrix type.

3. The monitor shall operate between 32 degrees and 120 degrees Fahrenheit.
4. The monitor shall display a live picture from the camera when the system is powered (even if the recording is not in progress).
5. The monitor shall include a system speaker to provide monitoring of the live audio from remote transmitter microphone or from recorded sound during the playback mode.
6. The monitor shall operate independent of the recording device, ensuring the system shall function even if the monitor is not displaying a picture.
7. The monitor shall have a volume control which will allow the user to adjust audio level and turn off monitor sound if desired.
8. The monitor shall display at a minimum: date/time, user identification information, emergency light indication, braking indicator and microphone activation indicator.
9. The monitor shall operate on a power source that is filtered, regulated, and short circuit protected. The voltage supplied to the camera shall meet the monitor manufacturer's specifications and shall not vary with fluctuation of the system's electrical system voltage of between 9 and 18 volts

**Transmitter/Wireless Microphone – two transmitters for use by two officers in one vehicle with a separate audio track for each transmitter:**

1. Wireless microphone transmitter shall operate in the 900 MHz band and utilize digital spread spectrum technology.
2. Transmitter must be compact in size with dimensions not to exceed 2.5"x3.5"x.70"h-w-d.
3. Transmitter microphone must come equipped with compact carry case or device, which attaches the system to the user's utility belt and does not interfere with operational use.
4. The microphone transmitter shall be equipped with an external microphone with a universal connection port for replacement microphones.
5. Frequency Division Multiple Access (FDMA) technology shall be employed to allow up to 20 users at a scene. A sufficient number of different codes/ID's shall be available for use with the transmitters to ensure that no two transmitters use the same code.
6. The system shall provide two in-vehicle docking stations. These stations shall include the system's receiver and shall be capable of recharging both transmitter batteries.
7. Both the transmitter and docking station shall have the ability of sending simultaneous audio and data streams. The data stream shall be used to send status information between the transmitter and the docking station.
8. Each docking station shall employ built-in diversity antenna.
9. The system shall include a hard-wired in-car microphone to record conversations inside the patrol vehicle simultaneously with conversations recorded with the wireless mic. The in-car microphone shall mount inside the rear passenger compartment and be controlled by a switch integrated with the control panel.

10. The microphone transmitter shall be equipped with an internal antenna. It shall not utilize the microphone cord as an antenna.
11. The transmitter shall include a detectable mic cord with clip to allow the mic to be placed anywhere on the officer's uniform. A windscreen shall be provided with the microphone to reduce noise.
12. The microphone transmitter shall be equipped with an internal microphone, which will allow recording to continue event if the external microphone is disconnected.
13. The microphone shall automatically turn on when the recording device is activated and off when the recording device is deactivated.
14. The microphone transmitter shall operate on rechargeable (Lithium) batteries.
15. The transmitter microphone must be capable of working with any mobile audio video system of the same brand.
16. The transmitter must be equipped with a backlit status display which informs the user of transmit status, battery strength and recorder status.
17. The microphone transmitter shall be capable of 10 hours continuous use recording without recharging.
18. The microphone transmitter shall have a minimum operating range of 1,000 feet.
19. The microphone transmitter must be equipped with a linking device or station, which synchronizes the operating transmitter frequency to the mobile video system being used.
20. Once synchronized to a recording device, the microphone transmitter will control that selected device only and no others in close proximity.

**In-Car Microphone/Recording:**

1. When the in-car microphone is switched on, the monitor's speaker or audio output shall automatically be turned off. This shall prevent feedback and insure the recorded conversations will not be heard over the monitor's speaker or through the audio output.
2. Switching on the in-car microphone shall also be configured to provide the capability of automatically muting the vehicle's AM/FM radio/sound system.
3. When the in-car microphone system is switched on, the camera's Record/Mic LED shall automatically be turned off to not provide any indication to anyone inside the vehicle that the system is on and recording.
4. The in-car microphone shall not affect the user of the officer's wireless microphone. Each audio source shall be recorded simultaneously on separate audio tracks.
5. It is preferred that audio from the in-car microphone be recorded on a third audio track. However, as an alternative, audio from the in-car microphone may be recorded on the audio track of the secondary transmitter. If the in-car microphone is switched on, it is recommended that the system automatically shut off the secondary transmitter.

## Video Recording

1. The digital video system shall record to a 4.7 Gigabyte DVD-RAM drive. An Option for Flash Card technology shall be provided, if available by the vendor. The drive shall be housed in a secured and environmentally controlled enclosure.
2. The operating system must be computer based and controlled. It shall also be upgradeable and fully compatible with future technology applications.
3. The digital recorder should have an operating temperature range of 35 degrees F to 115 degrees F. Within the enclosure the recorder should be able to operate with a temperature range from -20 degrees F to 150 degrees F.
4. The recorder shall utilize MPEG1 compression to allow recordings from the system to be played on any PC with a Windows Media Player. No conversion from the compression scheme used for the original recording shall be required or allowed to play segments on Media Player.
5. Video shall be recorded at a minimum of 30 frames per second and each frame shall contain a minimum of 352H x 240 V pixels.
6. The system shall offer three user selectable recording resolutions achieving the following record times on a 4.7 GB DVD-RAM disk:
  - a. High resolution mode – 5 hours and 20 minutes
  - b. Normal resolution mode – 7 hours and 30 minutes
  - c. Low resolution mode – 9 hours and 20 minutes
7. The recorder shall be capable of recording two audio tracks simultaneously in conjunction with the video signal.
8. The system shall include a user defined memory buffer for pre-event recording. The buffer shall be programmable through the set-up menu of the system to capture a minimum of at least 30 seconds up to 10 minutes of video prior to the recorder being activated. *Note: The video recording buffer must be independent of the audio recording – only video should record to memory (no audio either from the remote wireless microphone or within the vehicle shall record as part of this pre-event recording.*
9. The system shall include a user defined memory buffer for post-event recording. The buffer shall be programmable through the set-up menu of the system to capture a minimum of at least 30 seconds up to 45 seconds of video prior to the recorder being deactivated. *Note: The video recording buffer must be independent of the audio recording – only video should record to memory (no audio either from the remote wireless microphone or within the vehicle shall record as part of this pre-event recording.*
10. The recording system shall interface with the vehicle emergency equipment currently installed in the vehicle, having the minimum of two (2) activation switches, and shall display on the recorded media and the monitor, an indicator depicting when the emergency equipment was activated.
11. The digital recorder shall record two audio tracks simultaneously with the video signal.
12. The recorder shall generate to the recording media and the monitor the date/time, user identifiers, brake light indicator, emergency equipment indicator and audio indicator.
13. The date and time generate shall be self-adjusting for daylight savings time and leap year variances.

14. The date/time indicator and user identifier shall be on a battery backup to prevent loss of information in the event the vehicle battery is disconnected for up to a minimum of four (4) hours.

**Control Panel:**

1. System controller shall be made of durable construction, and be compact in design to allow for mounting in the overhead console, dash, or console between the seats.
2. The control panel shall not require any holes or cuts to be made in the vehicle's headliner.
3. A single cable shall connect the protective case to the control panel. The control panel shall provide the signal distribution to the monitor, camera and any other applicable or optional devices.
4. Controller must be enclosed in an ergonomically designed case with rounded edges to prevent injury to the user in the event of a sudden impact.
5. The system controller shall have controls or indicators that will be illuminated when activated as listed above.
6. The controller shall be equipped with an automatic brightness control in each of the indicator circuits.
7. Primary controls shall be backlit for night operations.
8. Controls:
  - a. Power on/off
  - b. Play
  - c. Record Start/Stop
  - d. Fast Forward
  - e. Rewind
  - f. Stop
  - g. Zoom Controls (if not easily accessible on the camera)
    - i. Zoom in/out
    - ii. Auto Focus
    - iii. Selectable Shutter
    - iv. Backlight Control
9. Indicators:
  - a. Power on
  - b. Microphone on

- c. Recording media inserted and operational (Flash Card/DVD)
  - d. Recording
  - e. Fast Forward
  - f. Stop
  - g. Time Counter
  - h. Problem Indicator
10. Control panel shall include a Set-up Menu that shall include the following features/options:
- a. User Friendly Access – pressing any switch on the monitor shall access the main menu. Menu access and entry shall not require a separate programmer or external device.
  - b. Limiting Menu Access – a method shall be available to limit access to the menu. If this method is selected, additional security measures shall be required to gain access to this menu option.
  - c. Time and Date Generator – records time on the media in hours, minutes and seconds
  - d. Time/Date Change Recording – all changes to the set-up menu shall be recorded automatically. Changes shall not be possible without media in the recorder recording this change. This feature shall be incapable of being detected by the operator.
  - e. Time and Date Position – the time and date shall be capable of being placed at the top or bottom of the screen.
  - f. Date Format – Three date formats shall be available: MM/DD/YY, and MM/DD/YYYY.
  - g. 60 Character Generator – 3 lines of 20 characters per line shall be available for the operator to insert descriptive identifier data.
11. The Record function may be initialized by all of the following modes:
- a. User pushes record button
  - b. User activates the emergency equipment
  - c. User activates the record button on the wireless microphone transmitter.
12. Programming of the mobile audio video system shall be restricted to authorized personnel only through the system controller.
13. The recording device rewind/fast forward/record controls shall not be accessible and/or usable by the operator when the environmentally controlled enclosure is opened to replace the recording media.

**Security Features:**

- 1. The mobile audio video (MAV) recording system shall have the capability to restrict access to the programming functions to agency defined authorized users only. This includes, but is not limited to: date/time features, activation requirements, and pre-event buffer memory thresholds.

2. The recording device must have the capability of preventing the user from erasing or taping over previously recorded information from either inside the vehicle or at the recording device controls.
3. The recording device shall contain a method to determine if the recording media has been tampered with after it was recorded.
4. The trunk-mounted (or other location) device shall be enclosed in an environmentally controlled metal case with locking capabilities.

**Protective Enclosure:**

1. The protective enclosure shall be crash resistant and capable of providing security from any attempts to vandalize or remove the recording media without authorization.
2. The protective enclosure must be sealed to prevent the introduction of dust or moisture that may harm or prevent functioning of the media recording device.
3. The protective enclosure shall contain environmental controls and shall possess a self-contained heating and cooling system that is automatically controlled by internal electronic thermostatic unit. To accomplish the heating and cooling function, the protective enclosure shall not require vent hoses or modification to the vehicle.
4. The environmental control system must be designed to keep the recording device and internal electronics and equipment within the operating range as specified by the recorder manufacturer. During extreme conditions, the recording device should reach operational temperatures within ten minutes.
5. The protective enclosure must be capable of being mounted either vertically or horizontally in the trunk of a patrol vehicle to maximize storage of other equipment.

**Storage and Tracking Software**

1. The bidder shall include a quote for a software package to provide the ability to search, display and copy the recorded digital files.
2. The bidder shall include costs for a software package to track the use and storage of DVD-RAM or Flash Card recording media by both the user and custodian of these recordings.
3. The software package will provide the ability of the user to check out and in Recording Media and allow an employee to note storage and subsequent disposition of the disk.
4. The software shall provide search capabilities to locate disks by, at a minimum, date, operator, and/or assignment.
5. The software program shall be capable of operating in a Microsoft Windows (XP preferred) environment on a personal computer.

**Operating Instructions and Specification Manual**

1. A full and complete set of operating instructions shall be furnished at no cost by the vendor with each unit; as well as all vendor product service manuals and complete and detailed electrical

schematics on each camera, digital recorder, controllers, and cable assemblies furnished by the contractor.

#### **Manufacturer's Quality Control and Testing**

1. All electrical components utilized, including integrated circuits, shall be a high reliability commercial grade part.
2. Each individual electrical and electronic component is subjected to a complete quality control inspection. This is required before installation into printed circuit board or other sub-assembly.
3. All assembled printed circuit boards and sub-assemblies are thoroughly inspected and completely tested mechanically and electrically before being installed into the video system.
4. All printed circuit boards shall be glass epoxy, type FR4 or equivalent. Also all high-density circuit boards shall be the solder mask type.
5. All components dissipating power in excess of one watt and mounted directly against a circuit board shall have adequate heat sinks for circuit board protection. All electronic and electrical components shall only be utilized within their manufacturer's operating specifications, pertaining to voltage, current and heat dissipation characteristics.
6. Each complete video system shall be individually bench tested for all functions and test parameters.

#### **Training**

1. The vendor will be required to provide, at no additional cost, onsite training for City of Palo Alto personnel to install the MAV equipment.
2. Onsite training in a classroom "train-the-trainer" environment will be provided to Palo Alto Police Department personnel in the operation and use of the MAV equipment. This training shall not exceed 40-hours.
3. Additional technical training shall be provided to Police technical personnel to change out components in need of repair.

#### **Warranty**

1. The manufacturer shall guarantee all camera, digital recorder, environmental components, wireless and non-wireless microphones, docking stations, monitors and control circuit components to be free of defects in materials and workmanship for a period of one year from the date of delivery to the department.
2. As an Option, the Bidder shall include a quote for full parts and labor extended manufacturer's warranty for a period of thirty-six (36) months from date of delivery and an additional quote for a period of sixty (60) months from date of delivery.

#### **Installation**

1. All components must be mountable to comply with air bag requirements.



**Service of System Following Installation**

1. Bidders must provide service proposal for components of the MAV system requiring repair after installation. Mobile audio video systems will be a critical component of the police fleet and must be functioning properly before vehicles will be placed in service. It is important to have timely repairs to keep our police units in the field.
2. It is desirable to have spare parts on site (provided at the bidders expense) in order to exchange defective components and/or the ability to provide repairs within 24 hours of notification. Bidders are encouraged to provide a solution to serving their systems in the most efficient and timely manner.

## **Mobile Audio Video Procedure**

### **446.1 PURPOSE AND SCOPE**

The purpose of this policy is to provide guidelines for the use, management, storage, and retrieval of information recorded by the in-car Mobile Audio & Video (MAV) recording system. The Department has equipped patrol vehicles with MAV equipment. The MAV is designed to assist officers in the performance of their duties by providing a visual and/or audio record of the encounter. The record is designed to provide objective visual/audio documentation of the incident being recorded.

### **446.2 TRAINING**

Department personnel will not use the MAV until they have completed training in the proper use of the system. Department personnel with specific training in the use of MAV equipment will conduct the training.

### **446.3 OFFICER RESPONSIBILITIES**

At the beginning of their shift, an officer will retrieve a blank MAV DVD or Flash Card. The officer will record their CJIC number, the date and time on the label. Each officer shall sign onto the system by entering their CJIC number into the computer.

Prior to going into service, each officer will insure that the MAV equipment is properly functioning. Required procedures include checking the power source, checking connections to the recording equipment and checking that the system is recording both audio and visual information (including a remote activation test). Any malfunction of the MAV shall be reported immediately to a supervisor. In the event of a malfunctioning unit, the officer shall take the vehicle out of service unless a supervisor requests the vehicle remain in service. If a vehicle is placed in service without an operational MAV, a notation shall be made to Dispatch via radio transmission. The supervisor will ensure that Technical Services Staff are notified of any system malfunction that requires repair or maintenance.

The officer may view MAV recordings in the field during their shift or, if necessary, retrieve the DVD or Flash Card from the MAV system prior to the end of their shift for review at any approved MAV workstation to assist in follow-up investigation or writing a report. Prior to resuming patrol duties, the officer is responsible for returning the original or an additional DVD or Flash Card to the MAV system in their patrol vehicle.

At the end of each shift, the officer shall log off the MAV system, retrieve the DVD or Flash Card, note the end of shift time on the label and deposit it into a secured MAV recording lock-box for uploading into the system by authorized Department personnel. Any recording(s) with evidentiary value shall be flagged with the case number on the DVD or Flash Card label.

MAV recordings containing arrests, assaults, physical or verbal confrontations, vehicle pursuits, vehicle searches in which contraband is recovered, driving while intoxicated or under the influence arrests, or any prisoner transport shall be treated as evidence and held for use in criminal prosecution.

Officers shall not erase, alter, reuse, modify or tamper with MAV recordings. Only a MAV custodian or designee may erase and reissue previously recorded media.

#### **446.4 MAV CUSTODIAN RESPONSIBILITIES**

The Technical Services Division has overall responsibility for the MAV system and shall serve as custodian of these records. All MAV recordings shall be retained in accordance with Government Code (GC) §34090 and GC §34090.6 for a period of not less than two years. Release of MAV system recordings shall be conducted in accordance with Penal Code §1054.5 (discovery requests for criminal prosecution), Government Code §6250 and in accordance with Policy Manual §810 (Release of Records and Information).

The MAV custodian or designee shall assign a system-generated unique identifier (ID) number to all new DVDs or Flash Card devices and log that information into the computerized tracking system prior to distributing them to field personnel. The MAV custodian or designee shall ensure there are a sufficient number of fresh DVD or Flash Cards available for field personnel at all times, along with an adequate supply of batteries for wireless microphones. All retrieved MAV recordings will be uploaded into the MAV server within the same day as recording during normal business hours and on the first business day following a weekend or holiday.

The MAV custodian or designee shall ensure the MAV server is backed up regularly and that recordings are accessible online by officers for a period of not less than 180 days from the date of recording. All routine requests by authorized department personnel for online access to MAV recordings for court preparation or other official business, outside the normal online access period, will be handled within 24 business hours of the request. If an emergency need to access these recordings is required, the Technical Services Division On-Call Technician can be contacted for immediate restoral and access.

The MAV custodian or their designee shall be responsible for the retrieval, storage, backup and duplication of all MAV recordings. Recordings not identified as evidence will be retained for a period of two years, at which time they will be purged.

MAV recordings will be stored on a separate and secure server. Any MAV recordings that necessitate being individually booked into evidence shall be handled in accordance with Policy Manual §610 – Property Procedures.

#### **446.5 MAV MAINTENANCE**

It shall be the responsibility of the users to ensure that the MAV equipment is maintained in accordance with the manufacturer's recommendations. Routine maintenance of the MAV system shall be conducted by approved department personnel to ensure the equipment is properly functioning and the recording quality and integrity is maintained at all times.

#### **446.6 ACTIVATION OF THE MAV**

Activation of the MAV is automatic when the police car's red lights are activated. The system remains on until turned off manually. The remote audio portion must be activated manually by each officer and is independent of the video; however, when the remote audio is activated the video will also record. The MAV system has pre-event recording capability and will record events prior to manual or automatic activation of the MAV into a memory buffer. Pre-event recording captures only video. No audio (remote or in-vehicle) is recorded during pre-event recording. Audio recording *begins* when the MAV system is manually or automatically activated. The Department has set the threshold for pre-event recording at 30 seconds prior to activation.

#### **446.61 REQUIRED ACTIVATION OF MAV**

There are many situations where the use of the MAV is appropriate. This policy is not intended to describe every possible situation where the system is appropriate. In addition to the required situations listed below, officers may activate the system if they feel its use would be appropriate and/or valuable to document an incident. Officers shall audibly and visually record the following when they occur within the field of view of the camera's recording range:

- (a) Any enforcement contacts involving actual or potential criminal conduct, which includes:
  - 1. All traffic stops (to include, but not limited to, traffic violations and all crime interdiction stops);
  - 2. Vehicular pursuits;
  - 3. Code 3 driving;
  - 4. Suspicious vehicles;
  - 5. Detentions and arrests;
  - 6. Pedestrian and bicycle stops;
  - 7. DUI investigations including field sobriety tests;
  - 8. Prisoner transports.
- (b) Self-initiated enforcement action in which an officer believes criminal activity may be occurring and would normally notify Dispatch.
- (c) Any other contact that becomes adversarial after the initial contact in a situation that would not otherwise require recording.
- (d) Any other circumstances where the officer feels MAV use would be appropriate.

Once the MAV system is activated, the video recording shall remain on until the incident has concluded (i.e., prisoners are transported). Exceptions are as follows: 1) in the event of an extended incident or detail (i.e., traffic control or accident scene) the officer may deactivate the system to conserve recording time; 2) officers may stop the audio recording to protect the anonymity of an informant, confidential source, or undercover officer; 3) if it becomes necessary to discuss issues surrounding the investigation with a supervisor or another officer in private, officers may turn off the remote transmitter thereby preventing their private audio conversation from being recorded.

The video recording shall not be terminated until the entire field contact is ended or as described above. In all instances, the officer shall document the reason for stopping the tape, either by orally noting the intention to stop the tape or by written notation in the police report.

#### **446.62 WHEN ACTIVATION NOT REQUIRED**

Activation of the MAV is not required when exchanging information with other officers or during breaks, lunch periods, when not in service, or actively on patrol. The MAV (both audio and video) shall not be operating when officers are inside a police facility unless officer(s) is responding to an emergency or a crime in progress at the location.

#### **446.7 REVIEW OF MAV RECORDINGS**

MAV recordings shall not be routinely or randomly reviewed to monitor officer performance. As such, MAV recordings may only be reviewed in any of the following situations:

- (a) By the officer themselves for preparation of written reports or follow-up investigations;
- (b) By a supervisor or manager investigating a specific allegation of officer misconduct;
- (c) By a Department employee after approval of a supervisor who is participating in an official investigation, such as a personnel complaint, administrative inquiry or a criminal investigation;
- (d) By Department personnel who request to review their own recordings in preparation for court testimony;
- (e) By authorized court personnel (e.g., District Attorney) during the court process. Recordings must be accessed through the proper process (Penal Code §1054.5 – criminal discovery or court order);
- (f) Recordings may be shown for the purposes of training value. If an involved officer objects to the showing of the recording, their objection will be submitted to the Chief to determine if the training value outweighs the officer's objection for not showing the recording. Recordings shown for training purposes will be presented in a fair and unbiased manner.

In no event shall any recording be used or shown for the purpose of ridicule or embarrassing an employee.

#### **446.8 DOCUMENTING MAV USE**

Any incident that was recorded with the system shall be documented in the officer's report. If a citation was issued, a notation shall be placed on the back of the records copy that the incident was recorded.

#### **446.9 RECORDING STORAGE & INTEGRITY**

All MAV recordings shall be stored on dedicated MAV server secured in the Police Department Computer Room. All MAV recordings shall be stored and retained in accordance with Government Code (GC) §34090 and GC §34090.6 for a period of not less than two years. The MAV custodian or their designee shall be responsible for the retrieval, storage, backup, and duplication of all MAV recordings. Recordings not identified as evidence will be retained for a period of two years, at which time they will be purged. All recordings are the property of the Police Department and dissemination outside of policy is strictly prohibited without written authorization of the Police Chief after consultation with the President of the Palo Alto Police Officers' Association or his or her designated representative. Any video distributed or disseminated outside of this policy will be edited so that no individual officer(s) may be identified.

#### **446.91 COPIES OF RECORDINGS**

No recording may be used for any purpose other than those outlined in §446.7. A copy (electronic or other media) of the recording will be made upon proper request to the MAV custodian or any person authorized in Policy Manual §446.7. Release of MAV system recordings shall be provided as outlined in §446.4.

#### **446.92 MANDATORY USE OF MAV SYSTEM**

The use of the MAV system is mandatory as outlined in this policy. However, the purpose of this policy is to assist officers in the performance of their duties and provide an objective record of Department actions. No disciplinary action for violation of this policy will be proposed except for the covert recording of other police personnel, the unauthorized review or release of recordings, or the employees refusal, either actively or passively, to use the MAV system.

**Palo Alto Police Department  
Comparison of IACP Model Policy and Palo Alto MAV Policy**

International Association of Chief's of Police (IACP) Model In-Car Policy (Palo Alto MAV Policy Listed for comparison)	Palo Alto Police Department – Mobile Audio Video (MAV) Policy
Guidelines for use, management, storage and retrieval. Includes definitions. Policy – evidence of criminal activity, valuable tool for law enforcement – document honesty, integrity and professionalism.	Consistent with IACP Model Policy
<p>Procedures Section</p> <ol style="list-style-type: none"> <li>1. <b>Program Objectives (446.1)</b></li> <li>2. <b>General Procedures</b> – automatic activation w/lights and sirens and manual activation. Officer safety primary consideration for use of equipment. Adequate training.</li> <li>3. <b>Officer Responsibilities</b> – pre-operational inspection of equipment; malfunctions reported immediately to supervisor; supervisor makes decision on operating without MAV; notation of operating without system via radio transmission. <b>446.3 and 446.5</b></li> <li>4. <b>Incidents Recorded</b> – traffic stops, priority responses, vehicle pursuits, prisoner transports, crimes in progress, discretion of officer based on training/experience. Narration of events; review of recordings when preparing reports; officers shall not alter, erase, modify or tamper. Recordings containing arrests, assaults, physical or verbal confrontations, etc., shall be treated as evidence and held for criminal prosecution. When equipment is activated it shall not be deactivated until the event is concluded: exception – extended incidents – requires documentation in report or orally noting intention to stop. Discusses length of media recording capability. Requires the media be marked if evidence. <b>446.3, 446.6, 446.61, 446.8</b></li> </ol>	<p>Procedures –</p> <ol style="list-style-type: none"> <li>1. <b>Program Objectives</b> Consistent w/model policy</li> <li>2. <b>General Procedures</b> – all procedures consistent with model policy.</li> <li>3. <b>Officer Responsibilities</b> – Consistent with each of the items listed in the IACP Model Policy. Palo Alto Policy provides more specific procedures for what to do with the recording media.</li> <li>4. <b>Incidents Recorded</b> – (Required Activation – 446.61) – Consistent with IACP Model Policy. Exception consistent with MAV Policy (extended incidents, conversations with supervisors) – IACP policy does not note exception for recording for anonymity of informant (Palo Alto Policy requires the remote transmitter be disconnected – video still continues but audio is silent. Palo Alto Policy does require the officer to note on written reports or on the tape audibly the tape is being stopped and why. Palo Alto Policy (446.62) provides additional information on when recordings are not required. Secret recording of policy personnel phrase has been eliminated (see new draft attached).</li> <li>5. Palo Alto MAV Policy lists a number of the supervisory responsibilities under <b>Custodian Responsibilities</b> – chain of custody log will be maintained on the MAV Server by Custodian from</li> </ol>

**Palo Alto Police Department  
Comparison of IACP Model Policy and Palo Alto MAV Policy**

<p>5. <b>Supervisors' Responsibilities:</b> chain of custody log; requires supervisor response if media needs to be removed; supervisory review of chain of custody log; periodic assessment of officer performance; ensuring the equipment is functioning properly; identify material that may be appropriate for training; bi-weekly review for new officers for compliance with operating the equipment. Includes recommended phrase for disciplinary action. Adequate media is on-hand. <b>446.4 and 446.7</b></p> <p>6. <b>Technicians Responsibilities:</b> media and supervisor are synonymous). Responsible for storage, duplication; accountability for tracking; adequate supply of media; long-term storage; cleansing and re-issuance of media with no evidentiary value. <b>446.4 and 446.5</b></p> <p>7. <b>Media Duplication</b> tapes or other recording media and recorded images property of agency, dissemination outside without specific authorization is strictly prohibited; media shall not be copied into any device not approved by department media technician or forensic media staff. A copy should be used when possible; conclusion of need media should be provided to technician for further storage or disposal. <b>446.9 and 446.91</b></p>	<p>Technical Services; supervisory review of equipment, ensuring adequate supplies of media (DVD or Flash Cards are on hand.</p> <p>6. <b>Technician, Media Duplication</b> requirements are consistent with Palo Alto MAV policy – although Palo Alto's policy has the Custodian of Records (Technical Services) assuming some of the responsibilities noted for supervisors in the IACP Model Policy. Palo Alto provides additional detail on procedural items.</p>
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ATTACHMENT E

ATTACHMENT

**PALO ALTO POLICE DEPARTMENT  
MOBILE AUDIO VIDEO (MAV) TRAINING  
OUTLINE**

- I. Introduction, Overview, and History
  - a. Welcoming Remarks
  - b. Logistics / Administrative Matters
  - c. Activities of the Course
  - d. History of MAV
  
- II. Case Law Affecting Criminal Patrol
  - a. Terminology for Criminal Interdiction
  - b. Cases Based on Criminal Patrol
  
- III. Criminal Patrol Using Mobile Video
  - a. The Similarities and Differences of DUI/DWI and Criminal Patrol
  - b. Vehicle Positioning
  - c. Positioning of Suspect(s)
  - d. Articulation During an Interdiction Stop
  - e. Articulation and Video Recording of Evidence Found During a Search
  
- IV. Stop and Frisk Documentation
  - a. Pennsylvania v. Mims
  - b. New York v. Class
  - c. U.S. v. Miller
  - d. U.S. v. Strickland
  - e. U.S. v. Baker
  - f. U.S. v. Walker
  - g. U.S. v. McCoy
  - h. Constructive Possession
  - i. Affirmative Link to Possession
  
- V. Video Documentation of Search and Seizure
  - a. Katz v. U.S. – “Expectation of Privacy”
  - b. Exception to a Search Warrant
  - c. Automobile Exception – “Exigent Circumstances”
  - d. Search Incident to Arrest
  - e. Consent to Search
  - f. Inventory Search

- VI. Admissibility and Surreptitious Recordings
  - a. Rules for Admissibility of Video Evidence
  - b. Seven Step Testimony
  - c. Rules for Inaudible Portions of Recording with Poor Quality
  - d. Rules for Video Problems with Admissibility
  - e. Informing the Suspect
  - f. Expectation of Privacy
  - g. Reasonable Society
  - h. Right Against Self-Incrimination
  - i. Voluntary Statements
  
- VII. Ethics and Integrity
  - a. Why are Ethics and Integrity Important?
  - b. What is Perception?
  - c. Ethics and Integrity
  - d. Gallop Poll Report
  - e. Lost Profession in Ethics and Integrity
  - f. Code of Ethics
  - g. Totality
  
- VIII. Mobile Video Terminology
  - a. The Terminology
  - b. When to Activate and Deactivate the Video Recording System
  
- IX. Vehicle Positioning and Lighting
  - a. Arena of Performance
  - b. Proper Vehicle Positioning for Video
  - c. Proper Lighting For Video
  - d. Types of Lighting That Cause Problems During Video Recording
  
- X. Reasonable Suspicion/Pre and Post Arrest Questioning
  - a. The Legal Issues Surrounding “Articulable Facts”
  - b. How Reasonable Suspicion Differs From Probable Cause
  - c. Specific on How Articulation and Mobile Video May Reinforce a Violator Contract
  - d. Investigative Questioning as Opposed to Custodial Interrogation
  
- XI. Mobile Video Equipment
  - a. Cameras
  - b. Audio Systems
  - c. Recording Devices and Tapes
  - d. Control Head / Panels
  - e. Monitors
  - f. Maintenance
  - g. Additional Concerns
  - h. Troubleshooting

- XII. Admissibility/Surreptitious Recordings
  - a. Seven Step Admissibility of Video
  - b. Inaudible Portions, Broken Tapes, Poor Visual Quality
  - c. Tips for Recording Conversations Inside a Police Vehicle
  
- XIII. Field Training Program
  - a. Training of a Probationary Officer in The Use of Mobile Video Techniques
  - b. Using Mobile Video to Train a Probationary Officer
  - c. Using Mobile Video to Support and Document a Probationary Officer's Progress
  
- XIV. Standardized Field Sobriety Testing Using Mobile Video
  - a. Standardized Field Sobriety Testing Using Position A
  - b. Alternate Field Sobriety Testing Using Position B
  - c. Building a Case Using a Refusal of Field Sobriety Tests
  
- XV. Mobile Audio Video Equipment
  - a. Overview of Equipment
  - b. Functions and Features
  - c. Troubleshooting
  - d. Viewing Media
  - e. Media Storage

Mobile Audio Video (MAV) System  
System Functionality and Compliance with Bid Specifications/Requirements

Description	I3/Mobile Vision	Demonstrated Specification Compliance	Kustom Signals	Demonstrated Specification Compliance
Record time without media change (highest quality)	2 hours, 40 minutes	No	12 hours	Yes
Chain of Custody for Downloading	No ID information required on log-in Download begins when vehicle enters wireless "hot spot" location	No	ID Required on log-in	Yes
Wireless Download			User gets prompt for download to begin	
File Compression	MPEG4 only	No	User selectable choice of MPEG1, MPEG2, MPEG4	Yes
Wireless remote microphone – ease of use	Backlit LCD display, beeps, button must be pushed to illuminate display at night, button is on front of unit – requires officer to take it out of holster to activate	No	Beeps and vibrates, has a color-coded illuminated light for ease of viewing by officer, buttons are on the top of unit for ease of access by officer inside the holster	Yes
Crash activation feature	No	No	Yes	Yes
Background recording available	Yes, user can enable; feature can't be locked out	No <sup>1</sup>	No	Yes <sup>2</sup>
Infrared back seat camera	Yes	Yes <sup>3</sup>	Yes, and is clandestine	
Future growth of system – Research & Development and Expandability	Expansion of flashcard memory	N/A	Remote reception of backseat microphone using officer's transmitter; networking; license recognition	N/A

<sup>1</sup> Vendor provides only one method for locking out user access – limiting the ability to remove the Flash Card as well.

<sup>2</sup> Outlined under Limiting Menu Access

<sup>3</sup> The camera is visible outside the vehicle and in the back seat

Mobile Audio Video (MAV) System  
System Functionality and Compliance with Bid Specifications/Requirements

Description	I3/Mobile Vision	Demonstrated Specification Compliance	Kustom Signals	Demonstrated Specification Compliance
Number of audio tracks	3 (one for backseat, separate one for 2 officers)	Yes, exceeds	2 (one for backseat, two officers share the other	Yes
Zoom on forward facing camera	12x optical, 12x digital – 144x total	Yes, exceeds	4x optical, 10x digital, 40x total	Yes
Metadata (date/time, other information)	Removed from video during playback	Yes	Embedded on video during playback	Yes
Reactivate Recording when viewing old file in playback	Press “record” only	Yes	Press “stop” then “record”	Yes
Camera low-light capability	As low as .03 Lux	Yes, exceeds	1.0 Lux or lower	Yes
Wireless microphone activation	Automatic when system activates, no action required	Yes	Automatic when system activates, no action required	Yes
GPS Compatibility	Yes	Yes	Yes	Yes
Trace / tracking feature with GPS enabled	Yes	Yes	Yes	Yes
Zooming for ease of license plate reading	One-touch zoom	Yes	One-touch zoom	Yes
Audio band	900 MHz or 2.4 GHz digital spread spectrum	Yes	900 MHz digital spread spectrum	Yes
Stopping video recording	Press “stop” from inside vehicle	Yes	Press “stop” from inside vehicle	Yes
Ability to record video speed	Yes, based off GPS coordinates	Yes	Yes, based off GPS coordinates	Yes



















