City of Culver City, California
City Council Agenda Item Report

Meeting Date: 07/11/05	Item Number: A-10
AGENDA ITEM: Authorization to Enter Into an Agreement with Hoffman Video Systems for the Purchase and Installation of Voting Software and Hardware, Audio, Video, and Broadcast Production Equipment for the Mike Balkman Council Chambers.	
Contact Person/Dept.: Joe Susca Public Works	Phone Number: 310-253-5763
Fiscal Impact: Yes [X] No []	General Fund: Yes [X] No []
Public Hearing: []	Action Item: [X] Attachments: [X]
Public Notification: Master Notification List; Doug Nielsen; Broadcast Media Communications; Studio Spectrum Inc.; Edwards Technologies, Inc.; Spinitar; VTP Inc.; SPL Integrated Solutions; Pro Sound; Media Centric; TV Magic; Sunset Studios; Granicus; Hoffman Video Systems; A-Vidd Electronics; and Darren Doerschel were notified by e-mail on July 6, 2005.	
Department Approval: Charles D. Herbertson 6/28/05	CAO Approval: Deborah Fancett for Jerry Fulwood 7/5/05
Interim City Controller Approval: Marlee Chang 7/5/05	

RECOMMENDATION:

Staff recommends that the City Council authorize entering into an agreement with Hoffman Video Systems for the purchase and installation of various audio, video and broadcast production equipment, and to replace the existing voting software and hardware system for $204,851 *Council Chambers Audio-Video Upgrade P-849,* and *Council Chambers Acoustics, P-846.*

BACKGROUND:

When City Hall's construction was completed in 1995, the Mike Balkman Council Chambers (Chambers) was equipped with various voting, audio and video equipment components, many of which are controlled through an AMX system. The AMX system remotely controls such functions as voting, microphone muting, speaker volume, white screen up/down, chime, document stand camera zoom/focus, radio station transmission on/off, room lighting, overflow room speakers, and rear-projection screen viewing such as VHS tape, slide projector, and the City Clerk's personal computer.

Within two years after completing construction of City Hall, the City's cable television operator equipped the Chambers with broadcasting capability, adding

cameras and other broadcast production equipment necessary to produce and air live meetings held in the Chambers.

The primary goal of the Council Chambers Audio Video and Acoustics Project (Project) is to evaluate the audio, video, voting, room control, and broadcast production systems (System) and replace those components that are in jeopardy of failing, or have a poor history of reliability due to their age. The goal of the acoustic component of the Project is to identify and implement facility improvements to optimize the Chambers audio system performance. The secondary goal of the Project is to enhance the System's existing technology, features, and functionality.

At their February 14, 2005 meeting, the City Council authorized entering into an agreement for $13,425 with Darren Doerschel, a Systems Integration Consultant, to perform the following tasks:

1. Evaluate the Chambers acoustics and prepare a recommendation for its improvement.
2. Assess the existing System, advising staff on each component's life expectancy and its state of technology.
3. Analyze the feasibility of broadcasting in High Definition Television format.
4. Interview users of the System to discuss existing features and functionality and to identify any problems or desired enhancements to them.
5. Prepare a list of equipment and estimate their replacement costs.
6. Prepare installation diagrams for the new equipment and components to integrate them into the existing System.
7. Prepare a Request for Bid of plans and specifications to seek competitive pricing from dealers for the equipment, its configuration and programming, labor to install it, and end-user training.
8. Evaluate the bid responses with staff.
9. Perform project management oversight to ensure the equipment is properly installed, tested, and fine-tuned.
10. Compile the various new equipment operations manuals and other documentation into binders for end user reference.
11. Oversee training on the updated System for staff and City Councilmembers.

DISCUSSION:

Darren Doerschel has evaluated the City's existing System, coordinated meetings with various equipment manufacturers on behalf of the City, attended staff meetings to discuss the Project, and prepared a Request for Bid (RFB)

document of equipment and other specifications that was subsequently advertised to equipment dealers.

Assessment and Evaluation Report

Darren Doerschel evaluated the Chambers acoustics and the existing System's software, hardware and equipment components and prepared an *Assessment and Evaluation Report* (Report) that is attached to this staff report for your reference.

The conclusions of the Report are summarized below:

- Chamber Room Acoustics: Some minor sound echoing was observed in a few areas of the Chambers, as well as a loud Heating, Ventilation and Air Conditioning (HVAC) system.

  The minor echoing could be improved by hiring an architect to design and subsequently install acoustical material retrofits, but the $15,000 to $40,000 cost to do so is prohibitive when compared to the relatively minor amount of acoustical improvement it would provide.

  Taking the measures outlined in the Chamber Acoustical Improvement section of this staff report at a cost of $4,635 would reduce the noise originating from the HVAC system, allowing the audio system to operate without having to constantly compete with the background noise it creates.

- Voting System: The existing AMX voting system has exceeded its life expectancy. Although the software is operational for most functions and provides adequate electronic voting support for the public meetings, the operational limitations along with intermittent functional problems due to its age, call into question the future viability of the system. Additionally, due to continual compatibility issues with current technologies in the audio/video industry and the lack of system support or maintenance from the manufacturer and their dealers, the likelihood of component failure is high. Since no replacement exists, such a failure would be considered very problematic. As a result, the primary voting system should be replaced. This portion of the project is estimated to cost $45,000-$50,000.

- AMX Room Control System: Certain aspects of the system may still be of some functional use when integrated with a new voting system; however, due to signs of failure, life expectancy, and difficulty in integrating it with newer technologies, the entire system should be replaced with the expectation of

some cost savings realized by retaining some components and/or existing cabling. This portion of the project is estimated to cost $10,000-$15,000.

- Sound System: Although the sound system may be improved with a few component upgrades, the overall value of such an enhancement could only be accurately measured after installation, with little or no recourse if the improvements were not adequate. Most of the critical components in the existing sound system have exceeded their life expectancy and should be replaced by a complete, turnkey sound reinforcement system that has enhanced features and functionality that is better suited to the Chambers. This portion of the project is estimated to cost $45,000-$55,000.

- Rear Screen Projector: The existing rear-projection system has exceeded its life expectancy and should be replaced with a new one. Today's rear-screen projectors will be a marked improvement in image quality and illumination over the existing one. This portion of the project is estimated to cost $8,000-$12,000.

- Broadcast Production System:

  Show Production System: The Video Toaster, which is the heart of the PC-based broadcast system, has exceeded its life expectancy and should be replaced immediately. This portion of the project is estimated to cost $20,000-$25,000.

  Cameras: With the exception of the document camera, which is recommended to remain in place, the other cameras do not provide adequate low lighting capabilities, suffer from poor dynamic response, and due to their age, have become unreliable. The gain adjustment that is required on each camera, due to the light levels in the Chambers, make the images grainy and noisy. The cameras are obsolete, cannot be upgraded, and require complete replacement; however, their lenses may be used in the new cameras purchased. The existing cameras should be replaced with cameras equipped with better low-light features and current technologies. This portion of the project is estimated to cost $35,000-$40,000.

- New System Enhancements: In addition to evaluating the existing System, Darren Doerschel also addressed the following enhancements derived from the Public, Educational, and Government Television Channel Needs Assessment prepared for the City's cable television franchise renewal negotiations:

  Playback System: The budget may allow for a new, moderately priced automated playback system that will allow staff to automatically schedule the airing of the previously recorded meetings, as well as create and broadcast a bulletin board of community information. This portion of the project is estimated to cost $12,000-$15,000.

  On-Location Production Equipment: Budgetary constraints do not permit the purchase of an on-location production system at this time. A multi-camera system could be rented on occasion if required; or if an increased number of off-site meetings and events are expected, a multi-camera system should be considered in the future, along with equipment capable of editing the pre-recorded event prior to its broadcast. This portion of the project is estimated to cost $15,000-$20,000.

  Producing in High Definition Television (HDTV) Format: The responsibility of converting analog signal programming into digital format so that viewers at home may decode them on their digital televisions lies squarely with the satellite or cable television provider. The City currently produces its programming in analog signal format and may choose to invest in HDTV equipment to begin sending digital signals to the cable television operator directly, but to do so would cost considerably more for the Project's equipment replacements, or approximately $350,000 to $500,000 in additional costs. In approximately five or six years, however, the cost for HDTV production equipment will be reduced significantly, making it more feasible for Municipal Government TV Channels to begin thinking about slowly converting their equipment at that time. A couple of the components that will be purchased as part of this Project, like the Video Toaster Show Production System replacement, have dual analog/HDTV compatibility built into them.

System Evaluation Cost Estimate Summary

Item	Estimated Cost
Chamber Room Acoustics Improvement	$4,635
Voting System Replacement: Software and Hardware	$45,000 to $50,000
AMX Room Control System Replacement	$10,000 to $15,000
Sound System Replacement	$45,000 to $55,000
Show Production System Replacement	$20,000 to $25,000
Camera Replacements	$35,000 to $40,000
Automated Playback System*	$12,000 to $15,000
On-Location Production Equipment*	$15,000-$20,000
HDTV Production*	$350,000 to $500,000

*Denote Enhancements to the Existing System

Request for Bid

Utilizing the Assessment and Evaluation Report conclusions as a guide, Darren Doerschel prepared a RFB that specified equipment make and models, software, hardware, and end-user training requirements for the Project.

Unfortunately, no Culver City firms exist that are qualified to bid on the Project. The RFB was formally advertised on April 22, 2005. Fourteen equipment dealers attended the mandatory job walk held on May 12, 2005. Of those fourteen dealers, six submitted bids by the June 2, 2005 deadline as follows:

Hoffman Video Systems, Glendale, CA	**$216,519**
Broadcast Media Communications, Laguna Niguel, CA	$239,496
Pro Sound, North Hollywood, CA	$250,890
TV Magic, San Diego, CA	$265,059
Edwards Technologies, Inc., El Segundo, CA	$273,362
Spinitar, La Mirada, CA	$315,849

Upon receipt of the RFB responses, Darren Doerschel met with staff to evaluate and recommend an equipment dealer.

Hoffman Video Systems (Hoffman) has received favorable recommendations from their existing and prior clientele and as a result, staff recommends entering

into an agreement with Hoffman in the amount of $204,851 for the purchase and installation of the replacement audio, video, voting, and broadcast production equipment. To remain within budget, the $11,668 On-Location Production Equipment has been eliminated from the Project.

The new equipment comes with end-user training, a one-year warranty, and an enhanced maintenance agreement that includes a four-hour on-site response time to any new equipment failures.

SUMMARY OF ACOUSTIC IMPROVEMENTS AND SYSTEM EQUIPMENT REPLACEMENTS

Chamber Acoustical Improvements

Staff met with an HVAC contractor recommended by Darren Doerschel that proposed some low-cost measures that could be taken to reduce the HVAC noise in the Chambers. After reviewing the list with City facilities staff, all but their last recommendation was implemented as follows:

- Airflow Balancing: It was noted that the amount of air coming out of the air registers was significantly unbalanced throughout the Chambers. Some air registers had a very high volume of air coming out of them (creating noise) and others very little. We hired the HVAC contractor to balance the Chambers air registers, returning them to their original engineering specification when the building was first constructed. Completion of the air balancing has reduced the overall noise level from the air registers significantly, without reducing the overall volume of air being circulated throughout the Chambers.
- HVAC Pipe Vibration: It was observed that the HVAC piping that runs just behind the dais and over the roof of the Chambers was vibrating loudly, creating noise. City staff retrofitted the pipe with vibration eliminators, which has significantly reduced the vibration noise generated.
- Dais Air Registers: Subsequent to completing City Hall's construction, two additional air registers were installed in the ceiling directly above the dais. These air registers are noisy. City staff installed two attenuator boxes in the ceiling ductwork, which has resulted in making the air registers significantly quieter.
- *New Air Registers: Replacement of all the ceiling mounted air registers with new ones known for their reduced noise levels, along with increasing the size of the ducting that leads to them, was recommended.

*The HVAC contractor proposing the air register replacements could not guarantee a minimum amount of measurable noise reduction as a result of their replacement. As a result, staff decided to forego completing the work, estimated at $3,360.

The acoustical improvement work outlined above, except for the registers, was completed by a combination of Public Works crews and the HVAC contractor at a cost of $1,275 to the Project's budget.

Audio, Video, Broadcast Production, and Voting Systems

Following is a summary of the equipment replacements:

- **Rear Projector:** The new rear projection system will deliver nearly twice the illumination over the existing projector and deliver significantly enhanced image clarity. The total cost for this component is $14,000.
- **Cameras:** With the exception of the fixed document camera, all the remaining room cameras will be replaced. To reduce costs, the camera lenses will be reused, saving an estimated $10,000, for a total cost of $20,000.
- **Room Control and Voting System:** The existing AMX system that controls the Chambers audio and video functions and its voting system will be replaced with a state-of-the-art AMX system. The total cost for this component is $75,000.
- **Speakers:** All the ceiling speakers will be replaced. The total cost for this component is $4,000-$8,000.
- **Microphones:** Many of the microphones will be replaced. The total cost for this component is $4,000.
- **Audio System Replacement:** The heart of audio control system will be completely replaced with a state-of-the-art computerized system that will:
  - Increase the systems overall volume capability.
  - Increase the number of microphone ports and fix the existing poor quality floor microphones periodically installed for public meetings. This will eliminate the need for talkers to speak so closely into the microphone.
  - Automatically control any gain (feedback) the room may experience and adjust the speaker sound levels in a millisecond.
  - Includes a processor that permits individual microphone control.
  - The Chambers microphones will await sound input before turning on, in lieu of always being on. This helps to control gain and feedback from microphones that are not currently in use, but continue to be "on".
  - Enhanced microphone sensitivity levels allowing automatic self-adjustments to accommodate quiet or loud talkers, and close or far away

talkers. The microphones will automatically adjust to each type of talker to maximize their sound input resulting in a consistent level of speaker volume.

The total cost for this component is $35,000-$45,000.

- **Broadcast Production System:** The broadcast equipment will be replaced with a state-of-the-art system. The new broadcast system may provide staff the ability to create DVD's and automatically playback previously recorded meetings at a date and time desired, and will include the ability to create a community bulletin board. The total cost for this component is $20,000-$30,000

Project Cost Summary

Item	Cost
Chamber Room Acoustics Improvement	$1,275
Rear Projector Replacement	$14,600
AMX Room Control and Voting System Replacement	$75,000
Show Production System Replacement, New Cameras, and Automated Playback System	$65,800
Audio System Replacement	$40,600
On-Location Production Equipment	$11,668
Miscellaneous materials and supplies	$7,576
TOTAL	**216,519**

Chambers Unavailability

Hoffman Video Systems has proposed a nine week timeframe to complete the Project. As a result, staff anticipates the work will be completed by the end of September, 2005.

Staff anticipates the Chambers will not be operational for a period of up to three weeks during the new equipment installation. Public Works staff will be coordinating with the Chief Administrative Office to determine where to hold the public meetings usually held in the Chambers during the cutover period.

Once installed, training on the new systems' use will be held for the City Councilmembers, staff, and the City's Videographer. In addition to the training sessions, Hoffman will be attending the first public meeting for all the

Commissions, Redevelopment Agency, and City Council to perform any troubleshooting that may be necessary, and to ensure that users of the new system feel comfortable with its use.

Public Address System

The Fire Communications Division is researching the purchase of a mobile public address system budgeted at $10,000. The portable system will have wireless microphones and wired speakers allowing it to be set up for use at any remote location that has access to electricity. The system will be used at town hall and other public meetings and events and is funded by this Project.

FISCAL ANALYSIS:

The *Council Chamber Audio-Visual Upgrade (42000849)* and *Council Chamber Acoustics (42000846)* budget amounts to $229,580. These funds are allocated as follows:

Portable Public Address System	$ 10,000
Consulting	$ 13,425
Acoustical Improvements	$ 1,275
Chambers new voting software, hardware, and other audio, video and broadcast production equipment components; Installation and training.	$204,880
TOTAL	**$229,580**

Sufficient funds exist to purchase and install the replacement equipment from Hoffman Video Systems amounting to $204,851.

The City is currently negotiating a renewal of its cable television franchise. All or a portion of these expenditures may be reimbursed by the cable operator upon conclusion of those negotiations.

Staff recommends postponing the purchase of the $11,668 On-Location Field Equipment at this time due to budgetary constraints. Upon conclusion of the cable television franchise renewal process, funds may become available to purchase this equipment at that time.

ATTACHMENTS:

- Voting, Audio, Video and Broadcast Production System Equipment Assessment and Evaluation Report, April 17, 2005.
- Hoffman Video Systems RFB response, June 2, 2005

MOTION:

That the City Council:

1. Award an agreement with Hoffman Video Systems for Audio, Video, Voting and Broadcast Production Equipment in a total amount of $204,851; and

2. Direct the City Attorney to prepare the appropriate agreement; and authorize the Chief Administrative Officer to execute the agreement on behalf of the City.