

**City Council
Work Session**


**Upgrading Cablecasting and
Presentation Capabilities**

**8 p.m., Monday
January 4, 2016**

**Municipal Building
Council Chambers**

City of Greenbelt, Maryland

Memorandum

To: City Council
From: Michael McLaughlin, City Manager 
Date: December 22, 2015
Re: Cablecast and Presentation Upgrade

The purpose of the January 4, 2016 work session is to review the recommendations of Design and Integration, the city's consultant, on upgrading the City's cable casting and presentation capabilities. Council was briefed on the recommendations at a September 16, 2015 work session (minutes attached).

1. Upgrading the Council Room and Community Center Multipurpose Room for cable-casting and presentations – Attached is a proposal and cost estimate for the above work. It was prepared by the firm Design & Integration (D&I) of Baltimore. They have done this type of upgrade in the Council Chambers of Montgomery County and the City of College Park. The proposed work is costly at around \$208,000 - \$131,235 for the Council Room and \$76,766 for the Community Center Multipurpose Room. An explanation of this work was sent on June 12, 2015 and is attached.

\$50,000 is budgeted for this work in the Special Projects fund and remains available. The Special Projects fund has sufficient fund balance to cover the full estimated cost.

Andrew Sherer of Design & Integration, and Beverly Palau, Public Information & Communications Coordinator, will present the information and answer questions.

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DESIGN & INTEGRATION
The Evolution Of Human Communication.™

SYSTEM OVERVIEW
&
RECOMMENDATIONS REPORT

Presented to

CITY OF GREENBELT, MARYLAND

For the

MATV SYSTEM

FEBRUARY 24, 2015



February 24, 2015

Beverly Palau
City of Greenbelt, Maryland
25 Crescent Road
Greenbelt, Maryland 20770

DESIGN & INTEGRATION

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Baltimore, MD 21211
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Dear Ms. Palau,

The enclosed document contains a System Overview and a Recommendations Report for the City of Greenbelt Municipal Access Broadcast Studio design.

The **System Overview** provides information about the functions and features about the broadcast system that we are in the final stages of designing. This high level overview provides information about certain functions and features that are of particular interest, but should not be interpreted as a comprehensive and exhaustive list.

The **Recommendations Report** provides some of my personal thoughts on other improvements that could coincide with the audiovisual system. Particular attention is paid to the question of whether or not to upgrade the Community Center.

If you have any questions, comments, or concerns, please don't hesitate to get in touch.

Sincerely,

ANDREW SHERER, CTS-D, DMC-D
Design & Integration, Inc.
Office: 410.467.2815
Mobile: 443.301.9856
Email: asherer@designandintegration.com

SYSTEM OVERVIEW

The upgrades presented in this design represent a significant improvement in terms of features, functionality, and end results over the existing system. This system brings the City of Greenbelt in alignment with current High Definition standards that are present throughout the production and broadcast industries.

I would compare the designed system as being on par with a sporty “Hyundai” model. There are plenty of features and functions that are present in top-of-the-line broadcast systems, but in a more affordable vehicle. A typical “Hollywood” production would use larger and more sophisticated equipment, but as far as Public and Municipal Broadcasting systems are concerned, this is rather nice. To put it in more simplistic terms, this upgrade will be an improvement in excess of 100% compared to the current system.

Council Chamber

Robotic Cameras

The system features four ceiling-mounted, robotic Pan-Tilt-Zoom (PTZ) Cameras. These cameras can be remotely controlled by a single operator from the Control Room. Each camera has a Color Correction Unit (CCU) for full calibration and adjustment of color.

PTZ cameras are more typically utilized in video teleconferencing applications than in broadcast. The problem, however, is that remote controllable broadcast cameras are prohibitively expensive (as most broadcast cameras are designed to be used by a dedicated camera operator). These PTZ cameras are capable of outputting a Blu-ray quality 1080p signal and, with the added CCUs, produce a result that is on par with any professional camcorder.

This is something of a unique approach in a broadcast environment, but it was selected because it allows a single operator to preview and control all of the cameras simultaneously.

Camera Inputs

In addition to the PTZ cameras, there are SDI inputs for external, operator controlled broadcast cameras in both the council chamber and in the control room. These inputs feed directly into the broadcast switcher.

Podium inputs

The podium has HDMI and VGA (with audio) inputs which enable presenters to connect a laptop for presentations. Using the touchpanel in the control room, the system operator can send this source to any display in the room.

Wireless Microphones

Included in this system design are new wireless microphones and an eight channel wireless microphone receiver for use in Council Table Meetings. These omnidirectional microphones can be placed on the table without any associated cabling. When the session is completed, simply place the microphones back in their charging cradle. The typical battery life is 4-5 hours.

Feedback is reduced by two methods. The first is advanced signal processing (including the implementation of a feedback suppressor) with a Biamp DSP. The second is grouping the in-ceiling speakers into zones (similar to the method used in lighting). The audio from the microphones, while being sent to broadcast and to the speakers in the rear of the room, will not be sent to the speakers directly above the table.

In-Room Destinations

A new 60" TV (with rotating wall mount arm) will be placed on the wall behind the Council members (to the left of the City logo). This will allow audience members to see presentations without having to strain to look at the projection screen.

A 32" TV will be mounted on the rear wall (near the existing clock). This will give the council members a screen suitable for general viewing of presentation material. It is too small, however, to be suited for applications which require detailed viewing, such as architectural plans or detailed spreadsheets. In these applications, the projector and screen (which will remain in the same location) would be more appropriate.

Control Room

Flypack

One of the hallmarks of this system design, and what makes it so unique, is the flypack component. Many Public and Government access stations do not venture far from the confines of their studios and, thus, have no need for mobile equipment. This portable flypack has the ability to be fully integrated into the production studio or used on its own for remote location shooting.

When out in the field, the flypack is designed to record onto a hard disc recorder for later editing, or if a broadcast feed is provided, the flypack can mix live.

When integrated into the studio system, the flypack and the broadcast panel provided advanced controls and the ability to select between external cameras. If the flypack were removed, the system would still be operational, albeit in a more limited capacity. Video feeds from laptop inputs or any of the ceiling-mounted PTZ cameras could be sent to broadcast, but the ability is lost to control advanced editing and transitions.

System Control

A system operator is able to control all parameters from inside the Control Room. A joystick allows for control of the PTZ cameras. A touchpanel controls system power, source and destination selection, and basic parameters of the system. A Blackmagic broadcast panel allows for advanced video production, including transitions, color correction, and text-overlay (from a connected computer).

Broadcast Video

The final program video feed is distributed to Comcast, Verizon, and to the web-based Granicus platform. In our experience, these different networks have different volume settings related to way the video is encoded and transported. For this reason, separate volume controls for each platform have been provided.

RECOMMENDATIONS

Council Chamber

If upgrades to the Council Chamber's infrastructure were to take place, the most significant improvement would be to upgrade the existing lighting system.

Lighting

The fluorescent lighting and the light fixtures in the front of the room (nearest the council chamber) should be removed and replaced with a more professional lighting system. The large shape of the existing light fixtures can make placement of the ceiling mounted cameras difficult.

In general terms, a new lighting system would include several key lights positioned in front of the Council Chambers (shaped in a gentle semi-circle to match the layout of the Council) and soft backlights behind the Council. A gentle spotlight on the City of Greenbelt logo would provide an elegant backdrop.

Low Voltage LED Lighting is very popular nowadays and it is rather energy efficient.

Conclusions

While a lighting system upgrade won't make as significant of a change as a new High Definition broadcast system, the effects could still be significant and would greatly enhance the professional appearance of the production.

It is always difficult to affix firm numbers to these type of things, but if a lighting system was properly designed and installed, there may be a 40-50% improvement in the final result.

Community Center

Potential Upgrades

The existing Community Center is not very suitable for broadcast applications. There are significant shortcomings in nearly every category. In order to make the room presentable, significant changes would have to be made. These include a completely new lighting system, acoustic treatment, some style of backdrop (which may include a wooden fixture or tiling), and perhaps a riser for the staging area. As you can tell, this would represent a serious cost commitment, in addition to the additional audiovisual equipment involved.

While it would be possible to broadcast from the environment as it, the resulting image would not be very desirable. A large, white cinderblock room would look more like a basement or storage facility than a professional broadcast studio.

Conclusion

I understand that the reason Wednesday council sessions are held in the Community Center because there is a conflicting appointment in the Council Chamber. Instead of spending tens of thousands of dollars on a secondary audiovisual system and having a sub-standard room (or spending another tens of thousands of dollars to upgrade the physical infrastructure of the room), I would instead recommended swapping the locations of the meetings.

Having all broadcasts in the Municipal Building not only ensures that you are getting to most out of your investment, but also ensures you are not unduly spending extra money on a "B" system for the Community Center. If the decision was up to me, I would rather spend the funds on a single system that meets all of my needs instead of having to make sacrifices and have two limited systems.

Client: City of Greenbelt

Address: 25 Crescent Road
Address: Greenbelt, MD 20770

Contact: Beverly Palau

Tel: 240-542-2026

Fax: n/a

Email: bpalau@greenbeltmd.gov

Project: City of Greenbelt, MATV Consulting REV C

Date: June 3, 2015

Solicitation No.: n/a

DI Contract No.: GB 01 06-14

DI Contact: Andrew Sherer

Tel: 410-467-2815

Email: asherer@designandintegration.com



1001 Rectory Lane
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ITEM	DESCRIPTION	QTY.	CLIENT	CLIENT EXT.
1	Flypack	1	\$ 9,309.00	\$ 9,309.00
2	Council Chamber	1	\$ 35,930.00	\$ 35,930.00
3	Council Chamber Control Room	1	\$ 95,305.00	\$ 95,305.00
4	Community Center	1	\$ 76,766.00	\$ 76,766.00
5				
6			System Subtotal	\$ 208,001.00
7			Bond Fee Not Included	\$ -
8			System Total Cost	\$ 208,001.00
9				<i>Sales Tax NOT Included</i>
10				
11				
12				
13				

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Flypack

ITEM	MANUFACTURER/ MODEL	DESCRIPTION	QTY.	CLIENT	CLIENT EXT.
1					
2	Equipment Housing				
3	Gator Cases/ G-PRO-10U-19	Pro-Series, Molded, Military Grade, Portable, Rack Case; 10U, 19" Deep	1	\$ 207.00	\$ 207.00
4	Middle Atlantic/ BR1	Brush Plate for Front Facing Ethernet Switch	1	\$ 44.00	\$ 44.00
5	Middle Atlantic/ D1	1RU Storage Drawer	1	\$ 141.00	\$ 141.00
6					
7	Switching, Monitoring & Recording				
8	Blackmagic Design/ BMD-SWATEMPSW2ME4K	ATEM 2 M/E Production Studio 4K, Switching System	1	\$ 4,851.00	\$ 4,851.00
9	Blackmagic Design/ BMD-HDL-SMTW/SCOPEDUO	SmartScope Duo 4K, Preview Monitor w/ Built-In Scopes	1	\$ 1,208.00	\$ 1,208.00
10	Blackmagic Design/ BMD-HYPERD/ST2	HyperDeck Studio 2, SSD Based Recording System	1	\$ 1,208.00	\$ 1,208.00
11					
12	Network Equipment				
13	Cisco/ SG300-10PP-K9-NA	Small Business Grade Gigabit PoE Ethernet Smart Switch (10-Port)	1	\$ 414.00	\$ 414.00
14					
15	Custom Plates & Panels				
16	Custom/ RP-101	Custom Rackplate for Flypack	1	\$ 357.00	\$ 357.00
17		w/ (8) BNC-M, (3) HDMI-F, (4) XLR-F, (2) Shielded RJ45, (1) USB-A & Power			
18					
19	Factory Supplied Cables				
20	Custom/ Budgetary	Budget for Factory Supplied Cables	1	\$ 214.00	\$ 214.00
21					
22		Cables & Conenctors	1	\$ 143.00	\$ 143.00
23		Rigging & Hardware	1	\$ 36.00	\$ 36.00
24		Blanks & Perfs	1	\$ 43.00	\$ 43.00
25					
26					
27					
28		Freight	1	\$ 443.00	\$ 443.00
29					
30	Labor:				
31		Fabrication	0	\$ 52.00	\$ -
32		Installation	0	\$ 52.00	\$ -
33		Project Management	0	\$ 90.00	\$ -
34		Engineering	0	\$ 90.00	\$ -
35		Programming	0	\$ 90.00	\$ -
36		Training	0	\$ 90.00	\$ -
37		Documentation	0	\$ 42.00	\$ -
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					

TOTAL EQUIPMENT COST	\$ 8,866.00
TAX EXEMPT	\$ -
FREIGHT	\$ 443.00
TOTAL LABOR COST	\$ -
SYSTEM TOTAL COST	\$ 9,309.00

Client: City of Greenbelt
 Address: 25 Crescent Road
 Address: Greenbelt, MD 20770
 Contact: Beverly Palau
 Tel: 240-542-2026



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 Project: City of Greenbelt, MATV Consulting REV C
 Date: June 3, 2015
 Solicitation No.: n/a
 DI Contract No.: GB 01 06-14

DI Contact: Andrew Sherer
 Tel: 410-467-2815
 Email: asherer@designandintegration.com

Council Chamber

ITEM	MANUFACTURER/ MODEL	DESCRIPTION	QTY.	CLIENT	CLIENT EXT.
1					
2	Primary Display (Stage Left)				
3	LG/ 60LY340C	60" Diag. LED/LCD Display w/ RS-232 Control	1 \$	1,194.00	\$ 1,194.00
4	Chief/ PDRUB	Full-Motion Wall Mount for Confidence Display (Black)	1 \$	681.00	\$ 681.00
5	Crestron/ DM-RMC-SCALER-C	DigitalMedia 8G+ Receiver & Room Controller w/ Scaler for Main Display	1 \$	1,000.00	\$ 1,000.00
6					
7	Confidence Monitor (Rear Wall)				
8	Planar/ SL3250	32" Commerical Grade LCD Display	1 \$	680.00	\$ 680.00
9	Omnimount/ OC40F	Fixed Wall Mount for Confidence Display (Black)	1 \$	14.00	\$ 14.00
10	Crestron/ DM-RMC-SCALER-C	DigitalMedia 8G+ Receiver & Room Controller w/ Scaler for Confidence Display	1 \$	1,000.00	\$ 1,000.00
11					
12	Projector Equipment				
13	OFE/ Projector	Owner Furnished Projector (Qty:1)	0 \$	-	\$ -
14	OFE/ Lens	Owner Furnished Lens for Above (Qty:1)	0 \$	-	\$ -
15	Crestron/ DM-RMC-SCALER-C	DigitalMedia 8G+ Receiver & Room Controller w/ Scaler for Projector	1 \$	1,000.00	\$ 1,000.00
16	OFE/ Mount	Owner Furnished Projector Ceiling Mount for Projector (Qty:1)	0 \$	-	\$ -
17	OFE/ Ceiling Plate	Owner Furnished Ceiling Plate for Projector (Qty:1)	0 \$	-	\$ -
18	OFE/ Column	Owner Furnished Extension Column for Projector (Qty:1)	0 \$	-	\$ -
19	OFE/ Screen	Owner Furnished Projection Screen (Qty:1)	0 \$	-	\$ -
20					
21					
22	Microphone Systems				
23	OFE/ DIS/ Conferencing System	Owner Furnished Conferencing System Microphones (Qty:1)	0 \$	-	\$ -
24		<i>includes: DIS DM6010P (Delegatge Microphones), DISCM 6010P (Chairman Microphone)</i>			
25	Revolabs/ 01-ELITEMIC-OM	Elite Omnidirectional Tabletop Microphone	5 \$	410.00	\$ 2,050.00
26	Revolabs/ 01-ELITEMIC-GN12	Elite 12" Gooseneck Tabletop Microphone	3 \$	585.00	\$ 1,755.00
27					
28	Speaker System				
29	OFE/ Bose/ DS16F	Owner Furnished FreeSpace DS 16F, 70v Ceiling Speakers (Qty:6)	0 \$	-	\$ -
30					
31	Custom Plates & Panels				
32	Custom/ WP-201	Custom Wallplate for Presenter Podium Connections	1 \$	143.00	\$ 143.00
33		<i>w/ (1) XLR Connector for Audio & (2) Shielded RJ45 Connectors for DM</i>			
34	Custom/ WP-202	Custom Wallplate for External Camera Connections	1 \$	107.00	\$ 107.00
35		<i>w/ (2) BNC-F Connectors for SDI Cameras</i>			
36	Custom/ WP-207	Custom Wallplate for External Press Connections	1 \$	107.00	\$ 107.00
37		<i>w/ (1) BNC-F Connector for Video & (2) XLR Connectors for Audio</i>			
38	OFE/ Wall Plates	Owner Furnished Wallplates, Front of Stage (Qty:3)	0 \$	-	\$ -
39		<i>w/ (2) XLR Connectors Each</i>			
40	OFE/ Wall Plate	Owner Furnished Wallplate, Front of Stage (Qty:1)	0 \$	-	\$ -
41		<i>w/ (1) TRS Connectors</i>			
42					
43	Podium Equipment				
44	OFE/ Podium	Owner Furnished Presenters Podium (Qty. 1)	0 \$	-	\$ -
45	Shure/ MX418/S	18" Gooseneck Supercardioid Microphone for Podium	1 \$	233.00	\$ 233.00
46	Extron/ 60-526-01	Cable Cubby 300S w/ Cable Pass-Throughs	1 \$	379.00	\$ 379.00
47	Crestron/ DM-TX-201-C	DigitalMedia 8G+ Transmitter 201 for Presenter Input	1 \$	929.00	\$ 929.00
48					
49	PTZ Cameras				
50	Vaddio/ 999-9907-000	Roboshot 12 QCCU PTZ Camera System (Front, Middle, & Sign Language Locations)	3 \$	5,279.00	\$ 15,837.00
51		<i>w/ Wall Mount Kit & CCU Receiver</i>			
52	Vaddio/ 999-9917-000	Roboshot 30 QCCU PTZ Camera System (Rear Location)	1 \$	6,396.00	\$ 6,396.00
53		<i>w/ Wall Mount Kit & CCU Receiver</i>			
54					
55	Broadcast Cameras				
56	OFE/ Camera	Owner Furnished Broadcast Camera w/ Lens, Mount, and SDI Output (Qty:1)	0 \$	-	\$ -
57					
58	Factory Supplied Cables				
59	Custom/ Budgetary	Budget for Factory Supplied Cables	1 \$	214.00	\$ 214.00
60					
61		Cables & Connectors	1 \$	286.00	\$ 286.00
62		Rigging & Hardware	1 \$	214.00	\$ 214.00
63					
64					
65					
66		Freight	1		\$ 1,711.00
67					
68	Labor:				
69		Fabrication	0 \$	52.00	\$ -
70		Installation	0 \$	52.00	\$ -
71		Project Management	0 \$	90.00	\$ -
72		Engineering	0 \$	90.00	\$ -
73		Programming	0 \$	90.00	\$ -
74		Training	0 \$	90.00	\$ -
75		Documentation	0 \$	42.00	\$ -
76					
77					
78					
79					

TOTAL EQUIPMENT COST \$ 34,219.00

TOTAL LABOR COST \$ -

80
81
82
83
84
85
86

	TOTAL EQUIPMENT COST	\$ 34,219.00
	TAX EXEMPT	\$ -
	FREIGHT	\$ 1,711.00
	TOTAL LABOR COST	\$ -
	<hr/>	
	SYSTEM TOTAL COST	\$ 35,930.00

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Council Chamber Control Room

ITEM	MANUFACTURER/ MODEL	DESCRIPTION	QTY.	CLIENT	CLIENT EXT.
1					
2		<u>Mixing Desk Location</u>			
3		<u>Desk & Equipment Housing</u>			
4	Middle Atlantic/ ESUR-PS	60" Wide Edit Center Series, Premium Workstation w/ (2) 4RU Racks Embedded Into Overbridge	1	2,082.00	\$ 2,082.00
5					
6	Middle Atlantic/ UFA-8-F2	2RU Face-After Shelf for Concealing for Small Components	1	44.00	\$ 44.00
7	Extron/ 60-526-01	Cable Cubby for Computer Monitor Connections in Desk w/ Cable Passthroughs and AC Power	1	379.00	\$ 379.00
8					
9					
10		<u>Mixing Desk Monitoring</u>			
11	Planar/ 997-7412-00	PXL2770MW, 27-inch LED/LCD Monitor w/ HDMI, DP, Inputs	2	269.00	\$ 538.00
12	JBL/ LSR308	8" Two-Way Active Studio Monitor	2	288.00	\$ 576.00
13					
14		<u>Mixing Desk Controls</u>			
15	Owner/ Apple/ Mac Pro	Owner Furnished Apple Mac Pro Laptop Computer for Advanced Editing & Control (Qty:1)	0	-	\$ -
16	Crestron/ C2N-CAMIDJ	Digital Joystick Camera Controller for Robotic Cameras	1	1,357.00	\$ 1,357.00
17	Crestron/ TSW-1050-B-S	10.1" Touchscreen, Black	1	1,714.00	\$ 1,714.00
18	Crestron/ TSW-1050-TTK-B-S	Tabletop Mounting Kit for Above	1	179.00	\$ 179.00
19	Blackmagic/ BMD-TERANEX2D422	Teranex 2D Standards Converter	1	2,423.00	\$ 2,423.00
20	Blackmagic/ BMD- SWPANEL1ME	ATEM 1 M/E Broadcast Control Panel (Removable for Use in Flypack)	1	6,065.00	\$ 6,065.00
21	Extron/ 60-1096-01	Stereo Mixers w/ DSPs for (3) Separate Channel-Specific Volumes	3	350.00	\$ 1,050.00
22					
23		<u>Mixing Desk Small Components</u>			
24	Crestron/ DM-TX-201-C	DigitalMedia 8G+ Transmitter 201 for Flypack Output to Switcher	2	929.00	\$ 1,858.00
25	Crestron/ DM-RMC-SCALER-C	DigitalMedia 8G+ Receiver & Room Controller w/ Scaler for Output To Flypack	1	1,000.00	\$ 1,000.00
26	Crestron/ DM-RMC-SCALER-C	DigitalMedia 8G+ Receiver & Room Controller w/ Scaler for Video Monitor	1	1,000.00	\$ 1,000.00
27	RDL/ RU-ADA4D	4-Channel (Stereo) Audio Distribution Amplifier	1	292.00	\$ 292.00
28	Kramer/ VM-4HDxI	1:4 3G-SDI Distribution Amplifier	1	468.00	\$ 468.00
29	Blackmagic/ BMD-CONVMCSAUD	SDI to Audio De-Embedder	1	601.00	\$ 601.00
30	Blackmagic/ BMD-CONVMCAUDS	Audio to SDI Embedder	3	601.00	\$ 1,803.00
31					
32		<u>Custom Plates & Panels</u>			
33	Custom/ WP-301	Custom Wallplate for Flypack Connect/Disconnect w/ (8) BNC-M, 3 HDMI-F, 2 XLR-F & (1) Shielded RJ-45	1	321.00	\$ 321.00
34					
35	Custom/ WP-302	Custom Wallplate for Control Room External Camera Connection w/ (1) BNC-M for SDI Input	1	143.00	\$ 143.00
36					
37					
38		<u>Factory Supplied Cables</u>			
39	Custom/ Budgetary	Budget for Factory Supplied Cables	1	214.00	\$ 214.00
40					
41		<u>Main Equipment Rack Location</u>			
42		<u>Equipment Housing</u>			
43	Middle Atlantic/ ERK-4420	44RU Steel Equipment Rack w/ Sides & Rear Door	1	659.00	\$ 659.00
44	Middle Atlantic/ PFD-44	Plexiglas Door for Above	1	490.00	\$ 490.00
45	Middle Atlantic/ ERK-RR44	Rear Rails for Above	1	74.00	\$ 74.00
46	Middle Atlantic/ CBS-ERK-20	Caster Base for Above	1	152.00	\$ 152.00
47	Owner/ APC/ Power	Owner Furnished Uninterruptable Power Supply (Qty:1)	0	-	\$ -
48	Middle Atlantic/ D3	3RU Storage Drawer	1	159.00	\$ 159.00
49					
50		<u>Audio Components</u>			
51	Biamp/ TesiraFORTE AVB CI	12 Input, 8 Output Digital Signal Processor w/ AEC & AVB	2	2,641.00	\$ 5,282.00
52	Revolabs/ 01-ELITEEXEC8	Executive Elite 8 Channel Wireless Microphone System	1	6,160.00	\$ 6,160.00
53	Revolabs/ 02-08HDCG-C	Charger Base for 8-Channel Executive HD System	1	565.00	\$ 565.00
54	Revolabs/ 02-ELITECHGPWR	Power Supply for Above	1	57.00	\$ 57.00
55	Extron/ 60-845-01	40W Amplifier for 70V System	1	321.00	\$ 321.00
56	Owner/ DIS/ Conferencing System	Owner Furnished DISCM CU6011 Central Control Unit for Conferencing System (Qty:1)	0	-	\$ -
57					
58		<u>Council Chamber Switcher/Matrix</u>			
59	Crestron/ DM-MD16X16	16x16 Digital Media Switcher Card frame Chassis	1	6,143.00	\$ 6,143.00
60	Crestron/ DMC-4K-HD	4K HDMI Input Card	7	714.00	\$ 4,998.00
61	Crestron/ DMC-DVI	DVI/RGB Input Card	3	571.00	\$ 1,713.00
62	Crestron/ DMC-SDI	SDI Input Card	1	857.00	\$ 857.00
63	Crestron/ DMC-C	DM 8G+ Input Card	3	786.00	\$ 2,358.00
64	Crestron/ DMC-HDO	2-Channel HDMI Output Card	2	500.00	\$ 1,000.00
65	Crestron/ DMC-CO-HD	2-Channel DM 8G+ Output Card	3	929.00	\$ 2,787.00
66					
67		<u>Control & Networking Components</u>			
68	Crestron/ AV3	3-Series Control System w/ (6) RS-232 Connections	1	3,143.00	\$ 3,143.00
69	Cisco/ SG300-28PP-K9-NA	28-port Gigabit PoE+ Managed Switch	1	863.00	\$ 863.00
70	Middle Atlantic/ BR1	Brush Plate for Front Facing Ethernet Switch	1	44.00	\$ 44.00
71					
72		<u>Additional System Sources</u>			
73	Owner/ Sony	Owner Furnished DVD Player (Qty:1)	0	-	\$ -
74	Owner/ Sony	Owner Furnished DVD/VCR Combo (Qty:1)	0	-	\$ -
75	Owner/ Comcast	Owner Furnished Comcast Cable Box (Qty:1)	0	-	\$ -
76	Tightrope/ SX-LEHD-330	Cablecast Video Server, Automation & Channel Branding Appliance	1	13,714.00	\$ 13,714.00
77	Tightrope/ CG330-SDI	Cablecast Bulletin Board Server	1	4,000.00	\$ 4,000.00
78	Tightrope/ CBL-SVR430	Cablecast Pro Head End Automation System	1	6,429.00	\$ 6,429.00
79	Blackmagic/ BMD-VHUBSMART6G1212	Smart Videohub Dedicated to CableCast System	1	1,266.00	\$ 1,266.00

80	Blackmagic/ BMD-CONVMSYNC	Sync Generator w/ Tri-Sync & Black Burst	1	\$	264.00	\$	264.00
81	Middle Atlantic/ UFA-8-F1	Rack Shelf for Above	1	\$	30.00	\$	30.00
82							
83	<u>Video Processing Components</u>						
84	Blackmagic/ BMD-CONVMBHS24K	HDMI to SDI 4K Mini Converter	1	\$	295.00	\$	295.00
85							
86	<u>VTC System</u>						
87	OFE/ Tanberg/ 6000MXP	Owner Furnished Video Teleconferencing Codec (Qty:1)	0	\$	-	\$	-
88	Extron/ 60-1064-01	DVI to Analog Video Converter for Codec Inputs	2	\$	750.00	\$	1,500.00
89							
90	<u>Infrastructure</u>						
91	OFE/ Fiber Can	Owner Furnished On-Wall Fiber Termination Box (Qty:1)	0	\$	-	\$	-
92	OFE/ Comcast	Owner Furnished Comcast Broadcast System w/ SDI Input (Qty:1)	0	\$	-	\$	-
93	OFE/ Verizon	Owner Furnished Verizon Broadcast System w/ SDI Input (Qty:1)	0	\$	-	\$	-
94	OFE/ Granicus	Owner Furnished Granicus Broadcast System w/ SDI Input (Qty:1)	0	\$	-	\$	-
95							
96	<u>Factory Supplied Cables</u>						
97	Custom/ Budgetary	Budget for Factory Supplied Cables	1	\$	429.00	\$	429.00
98							
99		Cables & Connectors	1	\$	571.00	\$	571.00
100		Rigging & Hardware	1	\$	286.00	\$	286.00
101		Blanks & Perfs	1	\$	71.00	\$	71.00
102							
103							
104							
105		Freight	1			\$	4,538.00
106							
107	Labor:						
108		Fabrication	0	\$	52.00	\$	-
109		Installation	0	\$	52.00	\$	-
110		Project Management	0	\$	90.00	\$	-
111		Engineering	0	\$	90.00	\$	-
112		Programming	0	\$	90.00	\$	-
113		Training	0	\$	90.00	\$	-
114		Documentation	0	\$	42.00	\$	-
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	TOTAL EQUIPMENT COST	\$ 90,767.00
	TAX EXEMPT	\$ -
	FREIGHT	\$ 4,538.00
	TOTAL LABOR COST	\$ -
	SYSTEM TOTAL COST	\$ 95,305.00

Client: City of Greenbelt
 Address: 25 Crescent Road
 Address: Greenbelt, MD 20770
 Contact: Beverly Palau
 Tel: 240-542-2026
 Fax: n/a



1001 Rectory Lane
 Baltimore, MD 21211
 410-467-2815

Email: bpalau@greenbeltmd.gov
 Project: City of Greenbelt, MATV Consulting REV C
 Date: June 3, 2015
 Solicitation No.: n/a
 DI Contract No.: GB 01 06-14
 DI Contact: Andrew Sherer
 Tel: 410-467-2815
 Email: asherer@designandintegration.com

Community Center

ITEM	MANUFACTURER/ MODEL	DESCRIPTION	QTY.	CLIENT	CLIENT EXT.
1					
2	Projector Equipment				
3	Digital Projection/ 114-743	E-Vision WXGA 7000 Lumen Projector	2 \$	4,109.00	\$ 8,218.00
4	Digital Projection/ TBD by Integrator	Budget for Projector Lens, Exact Model To be Determined by System Integrator	2 \$	2,996.00	\$ 5,992.00
5	Creston/ DM-RMC-SCALER-C	DigitalMedia 8G+ Receiver & Room Controller w/ Scaler for Projector	2 \$	1,000.00	\$ 2,000.00
6	Chief/ RPAUW	Universal Projector Ceiling Mount for Projector (White)	2 \$	173.00	\$ 346.00
7	Chief/ CMA110W	Ceiling Plate for Above (White)	2 \$	143.00	\$ 286.00
8	Custom/ Column	Custom Length Extension Column for Projector (White)	2 \$	57.00	\$ 114.00
9	Da-Lite/ 25940	IDEA Screen, 100" Diag.(53"x84.7") 16:10 Whiteboard Projection Screen w/ Standard Marker Tray & Silver Frame	2 \$	1,097.00	\$ 2,194.00
10					
11					
12	PTZ Camera Equipment				
13	Vaddio/ 999-9907-000	Roboshot 12 QCCU PTZ Camera System w/ CCU Receiver	2 \$	5,279.00	\$ 10,558.00
14					
15	Vaddio/ 535-2000-296	Ceiling Mount Kit for Above	2 \$	286.00	\$ 572.00
16					
17	Speaker System				
18	JBL/ CONTROL 26CT	5.25" Surface Mount Speaker	4 \$	168.00	\$ 672.00
19	Extron/ 60-845-01	40W Amplifier for 70V System	1 \$	321.00	\$ 321.00
20					
21	Microphones & Audio Processing				
22	OFE/ Biamp/ Nexia VC	Biamp Digital Signal Processor (Qty. 1)	0 \$	-	\$ -
23	Revolabs/ 01-ELITEEXEC8	Executive Elite 8 Channel Wireless Microphone System	1 \$	6,160.00	\$ 6,160.00
24	Revolabs/ 02-08HDCHG-C	Charger Base for 8-Channel Executive HD System	1 \$	565.00	\$ 565.00
25	Revolabs/ 02-ELITECHGPWR	Power Supply for Above	1 \$	57.00	\$ 57.00
26	Revolabs/ 01-ELITEMIC-OM	Elite Omnidirectional Tabletop Microphone	1 \$	410.00	\$ 410.00
27	Revolabs/ 01-ELITEMIC-GN12	Elite 12" Gooseneck Tabletop Microphone	7 \$	585.00	\$ 4,095.00
28	Shure/ SCM810	Automixer for Revolabs Microphones	1 \$	1,500.00	\$ 1,500.00
29					
30	Control & Networking Componets				
31	Creston/ CP3	3-Series Control System	1 \$	1,286.00	\$ 1,286.00
32	Cisco/ SG300-10PP-K9-NA	Small Buisness Grade Gigabit PoE Ethernet Smart Switch (10-Port)	1 \$	414.00	\$ 414.00
33	Middle Atlantic/ BR1	Brush Plate for Front Facing Ethernet Switch	1 \$	44.00	\$ 44.00
34					
35	Control Interfaces				
36	Creston/ CNX-B8-W-T	8 Button Keypad, White (Mounted Near Projection Screen)	1 \$	257.00	\$ 257.00
37	Creston/ B2-BTN-W-T	Engravable Button Cap for Above	8 \$	7.00	\$ 56.00
38	Creston/ B-G1-FPAR-W-T	Faceplate for Above	1 \$	36.00	\$ 36.00
39	Creston/ C2N-CAMIDJ	Digital Joystick Camera Controller for Robotic Cameras	1 \$	1,357.00	\$ 1,357.00
40	Creston/ TSW-1050-W-S	10.1" Touchpanel, White (Wall Mounted near Equipment Rack)	1 \$	1,714.00	\$ 1,714.00
41	Blackmagic/ BMD-TERANEX2D422	Teranex 2D Standards Converter	1 \$	2,423.00	\$ 2,423.00
42	Extron/ 60-1096-01	Stereo Mixers w/ DSPs for (3) Separate Channel-Specific Volumes	3 \$	350.00	\$ 1,050.00
43					
44	Switching & Routing				
45	Creston/ DM-MD-8X8	8X8 Digital Media Switcher	1 \$	3,071.00	\$ 3,071.00
46	Creston/ DMC-4K-HD	4K HDMI Input Card	2 \$	714.00	\$ 1,428.00
47	Creston/ DMC-SDI	SDI Input Card	3 \$	857.00	\$ 2,571.00
48	Creston/ DMC-C	DM 8G+ Input Card	2 \$	786.00	\$ 1,572.00
49	Creston/ DMC-HDO	2-Channel HDMI Output Card	2 \$	500.00	\$ 1,000.00
50	Creston/ DMC-CO-HD	2-Channel DM 8G+ Output Card	1 \$	929.00	\$ 929.00
51					
52	Viewing & Monitoring				
53	Blackmagic/ BMD-HDL-SMTWSCOPEDU04K	SmartScope Duo 4k Dual 8" Preview Monitor	1 \$	1,208.00	\$ 1,208.00
54	Blackmagic/ BMD-CONVMBHS24K	HDMI to SDI 4K Mini Converter	2 \$	295.00	\$ 590.00
55					
56	Additional AV Converters & Processors				
57	RDL/ RU-ADA4D	4-Channel (Stereo) Audio Distribution Amplifier	1 \$	292.00	\$ 292.00
58	Kramer/ VM-4HDxI	1:4 3G-SDI Distribution Amplifier	1 \$	468.00	\$ 468.00
59	Blackmagic/ BMD-CONVMCSAUD	SDI to Audio De-Embedder	1 \$	601.00	\$ 601.00
60	Blackmagic/ BMD-CONVMCAUDS	Audio to SDI Embedder	3 \$	601.00	\$ 1,803.00
61					
62	Custom Plates & Panels				
63	Custom/ WP-501	Custom Wallplate w/ (2) SDI (Camera Inputs)	1 \$	71.00	\$ 71.00
64	Custom/ WP-502	Custom Wallplate w/ (1) BNC, (2) XLR, (To Outboard Recording Device)	1 \$	71.00	\$ 71.00
65	Creston/ DM-TX-200-C-2G-W-T	Wall DM 8G+ Transmitter w/ HDMI and VGA/A Inputs	2 \$	1,000.00	\$ 2,000.00
66					
67	Equipment Housing				
68	Middle Atlantic/ ERK-4420	44RU Steel Equipment Rack w/ Sides & Rear Door	1 \$	659.00	\$ 659.00
69	Middle Atlantic/ PFD-44	Plexiglas Door for Above	1 \$	490.00	\$ 490.00
70	Middle Atlantic/ ERK-RR44	Rear Rails for Above	1 \$	74.00	\$ 74.00
71	Middle Atlantic/ CBS-ERK-20	Caster Base for Above	1 \$	152.00	\$ 152.00
72	OFE/ APC/ Power	Owner Furnished Uninterruptable Power Supply (Qty:1)	0 \$	-	\$ -
73	Middle Atlantic/ D3	3RU Storage Drawer	1 \$	159.00	\$ 159.00
74	Middle Atlantic/ UFA-8-F1	2RU Face-After Shelf for Concealing for Small Components	3 \$	44.00	\$ 132.00

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Infrastructure
OFE/ Comcast
OFE/ Verizon
OFE/ Granicus

Owner Furnished Comcast Broadcast System w/ SDI Input (Qty:1)	0	\$	-	\$	-
Owner Furnished Verizon Broadcast System w/ SDI Input (Qty:1)	0	\$	-	\$	-
Owner Furnished Granicus Broadcast System w/ SDI Input (Qty:1)	0	\$	-	\$	-

Factory Supplied Cables

Budget for Factory Supplied Cables	1	\$	429.00	\$	429.00
Cables & Connectors	1	\$	429.00	\$	429.00
Rigging & Hardware	1	\$	143.00	\$	143.00
Blanks & Perfs	1	\$	71.00	\$	71.00

TOTAL EQUIPMENT COST \$ 73,110.00

Freight	1			\$	3,656.00
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Labor:

Fabrication	0	\$	52.00	\$	-
Installation	0	\$	52.00	\$	-
Project Management	0	\$	90.00	\$	-
Engineering	0	\$	90.00	\$	-
Programming	0	\$	90.00	\$	-
Training	0	\$	90.00	\$	-
Documentation	0	\$	42.00	\$	-

TOTAL LABOR COST \$ -

TOTAL EQUIPMENT COST	\$ 73,110.00
TAX EXEMPT	\$ -
FREIGHT	\$ 3,656.00
TOTAL LABOR COST	\$ -
SYSTEM TOTAL COST	\$ 76,766.00

WORK SESSION OF THE GREENBELT CITY COUNCIL held Wednesday, September 16, 2015.

Mayor Jordan started the meeting at 7:00 p.m. The meeting was held in Room 201 of the Greenbelt Community Center.

PRESENT WERE: Councilmembers Judith F. Davis, Konrad E. Herling, Leta M. Mach, Silke I. Pope, Edward V. J. Putens, Rodney M. Roberts and Mayor Emmett V. Jordan.

STAFF PRESENT WERE: Michael McLaughlin, City Manager; John Shay, City Solicitor; and Cindy Murray, City Clerk,

Executive Session

Ms. Davis moved that Council conduct an Executive Session in accordance with Section 3-305(b)(3) of the General Provisions Article of the Annotated Code of the Public General Laws of Maryland to consult with legal counsel regarding the acquisition of real property. Ms. Pope seconded.

<i>ROLL CALL:</i>	<i>Ms. Davis</i>	<i>-</i>	<i>Yes</i>
	<i>Mr. Herling</i>	<i>-</i>	<i>Yes</i>
	<i>Ms. Mach</i>	<i>-</i>	<i>Yes</i>
	<i>Ms. Pope</i>	<i>-</i>	<i>Yes</i>
	<i>Mr. Putens</i>	<i>-</i>	<i>Yes</i>
	<i>Mr. Roberts</i>	<i>-</i>	<i>No</i>
	<i>Mayor Jordan</i>	<i>-</i>	<i>Yes</i>

Council moved into Executive Session at 7:00 p.m.

Council reconvened to open session at 8:06 p.m.

Work Session on Technology Issues

STAFF JOINING MEETING: Dale Worley, Director of Information Technology, and Beverly Palau, Public Information and Communications Coordinator.

ALSO PRESENT WERE: George Boyce and Bill Orleans.



Upgrading the Council Room and Community Center Multipurpose Room for Cablecasting and Presentations:



Mayor Jordan explained that Council's Wednesday work sessions are held in the MultiPurpose Room of the Community Center because of the use of the Council Room by Greenbelt CARES on that evening. He said Council had asked staff to explore the possibility of equipping the Multipurpose Room with video streaming capability to allow for these work sessions, along with other community group meetings and presentations, to be viewed by residents.

Ms. Palau explained that a consultant, Design & Integration of Baltimore (D&I), had been contracted to examine and make recommendations on: 1) updating and upgrading the cablecasting and presentation capabilities of the Council Chambers in the Municipal Building and; 2) enabling cablecasting and presentations in the Multipurpose Room in the Community Center. D&I's recommended \$95,305 in upgrades to the Council Room video studio, including switcher equipment, a playback system, a studio control panel and a wireless sound system, and \$36,000 in upgrades to the Council Room, including remote controlled wall mounted cameras. D&I estimated \$76,766, which includes projection equipment, microphones and a sound system, ceiling mounted remote control cameras and switch and control equipment, to enable cablecasting from the Multipurpose Room in the Community Center. Ms. Palau said D&I further recommended that the City look into holding all meetings to be cablecast in the Council Room so that the upgrade investment is maximized.

Ms. Palau noted the prices received from D&I were estimates. She said if Council approves proceeding with either or both of the recommendations, the project(s) would go out to bid.

In response to concerns raised by Ms. Davis regarding wireless microphones, Ms. Palau said wireless microphone technology has improved greatly over the past few years.

Ms. Davis, Mr. Putens, Ms. Mach, Mr. Herling and Ms. Pope indicated their support of the Council Room and studio upgrades and suggested something be worked out with CARES to either relocate its Wednesday sessions or reschedule these session to another day.

Mayor Jordan said at least one room in the Community Center should have the facilities to provide for presentations and internet accessibility. Mr. Putens agreed. Ms. Davis and Ms. Pope asked about public Wi-Fi for the Multipurpose Room. Mr. Worley said this could be done.

Ms. Davis suggested a Council work session with D&I would be beneficial.

Paperless Agendas

~~Ms. Palau explained that the City has been utilizing Civic Plus Agenda Center to post all Regular Council Meeting agendas and all of the background materials to the City website which is available to anyone from any computer or mobile device. She said that for the past year, the agenda has also been cross posted to the City's Granicus Site. Ms. Palau said the benefit of the Granicus Platform, I-Legislate, is that users, such as City Council, can download an App to their I-Pads that will allow them to make annotations and notes to the agenda packet for their own use. She noted that I-Legislate is very user friendly and widely used. It also integrates with videos from past meetings so members can call up any part of any past recorded meeting to review. Ms. Palau said Granicus is coming out with a new Agenda Center type product that has been demonstrated to both her and Ms. Murray that can be used to help streamline the process and could eliminate the need to post the packet twice.~~

~~Ms. Palau provided a demonstration of how a "paperless agenda" book would look and how it would work.~~