



1202 Musser Street  
Muscatine IA 52761-1645  
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MEMORANDUM

WATER & RESOURCE RECOVERY FACILITY

To: Gregg Mandsager, City Administrator

CC: Nancy Lueck, Finance Director  
Cinda Hilger, Secretary

From: Jon Koch, WRRF Director

Date: August 8, 2019

Re: Camera System Upgrade and Expansion

**INTRODUCTION:** The City has received two estimates from FSS Incorporated for the upgrade and expansion of the existing camera system at the WRRF and Transfer Station/Recycling Center (TS/RC). The total project estimate is \$46,111.47 for new cameras, resetting old cameras, computer upgrade and server programming. Now is the time to purchase and install this system as we solicit customers for the MARRVE project that require verification of product destruction and safe storage. This is being bid outside of the construction contract (the current list of items outside of the contract is attached).

**BACKGROUND:** The WRRF has had a camera system since 2011 to secure the front off-loading area and front entrance. The system was installed and is maintained by FSS Incorporated. When camera or software upgrades are needed, FSS Inc. is contacted as they have the plans for our system and know how it was installed and programmed. Now that we are installing new cameras and upgrading the server, FSS is the only company capable of taking the current system and tying it to new equipment; therefore, we did not bid this job for someone to start over. While they may have been able to utilize existing cameras they would not have had the knowledge of our current system. FSS Inc. maintains the camera system for most City installations.

The TS/RC does not currently have any cameras installed. There are currently five cameras at the WRRF. This will give seven cameras to the TS/RC areas and five to the WRRF. Staff and clients will be able to access the cameras via the internet to verify product destruction and safe storage.

While this is only an estimate, FSS Inc. has historically come in under their estimates and always informs staff when and if we are getting close to going over. The issue of setting a hard bid number is in the programming and software integration. Until they start programming they won't know exactly what time is required. They know they are not to exceed the estimate.

**RECOMMENDATION/RATIONALE:** Staff recommends proceeding with the upgrade and

expansion of the camera system at the WRRF and Transfer Station/Recycling Center utilizing FSS Incorporated at an estimated cost not to exceed \$46,111.47.

**BACKGROUND INFORMATION:**

1. FSS Inc. estimates 1608 and 1610
2. Outside of contract items list

FSS Incorporated

30409 141 Ave  
 Illinois City IL 61259

# Estimate

Date	Estimate #
7/17/19	1608

<b>Name / Address</b>
Jon Koch Muscatine Water Pollution Control 1202 Musser St Muscatine, IA 52761

<b>Project</b>

Item	Description	Qty	Rate	Total
	REVISED QUOTE 7/17/2019 DELETE cameras on the thickener building Security camera work for main treatment plant: FSS Inc will re-use and integrate most of the existing security equipment in to the new camera system, meaning that project cost will be greatly reduced because FSS Inc had done the original design and installation several years ago. and has the necessary tools, prints, software and factory training to successfully tie the new system into the older existing system. This quote is based on the attached plans, with Owner providing 120v power, fiberoptic/internet connectivity, suitable client PC's for viewing, and will be connected to the system at the transfer station which is quoted separatley.			
Labor	Labor time: Reconfigure existing cameras 1-4 to operate on new system, and run wire to new server rack location. Also, remove cam 5 to be repurposed elsewhere.	3	85.00	255.00T
AN AV10225 PM...	Arecont 10MP outdoor bullet cam with IT and VF lens (telephoto lens)	1	1,700.00	1,700.00T
OS camera hardwa...	camera installation parts and hardware	1	40.00	40.00T
RWC CAT6 data ...	CAT 6 computer and data cable	100	0.41	41.00T
Labor	Labor time for adding new camera 6: Run wire to, and install new 10MP camera at rear of control building to be aimed towards new pit dump area	5	85.00	425.00T
	cams 7 and 8 on thickener building: DELETED ITEM			
	Head end equipment:			

<b>Subtotal</b>
<b>Sales Tax (0.0%)</b>
<b>Total</b>

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# Estimate

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7/17/19	1608

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<b>Project</b>

Item	Description	Qty	Rate	Total
other hardware	Recording server: Rack mounmt case w/ 12GB backplane and hardware RAID controller, Windows 2016 OS. 2X480GB SSD HDD's for OS, 4X6TB SATA HDD' for video archives. RAID 10. 32GB RAM. fiber ports. Xeon processor. Yield 10 days storage with 25% headroom	1	5,413.00	5,413.00T
AN X pro + base	Milestone X Protect + base license	1	699.00	699.00T
AN X Pro + device	Xprotect professional + device license	6	159.00	954.00T
AN X protect 3 yr ...	3 year SUP Xprotect professional camera license upgrade Note: Customer will provide existing switchgear and VLAN's, also monitor at head end. (existing)	6	59.00	354.00T
LT UPS-2200APR	UPS-POW-2000 back up UPS and surge protector power supply w/ ASD software	1	599.00	599.00T
Labor	Labor time: Build server, install software. Integrate network connectivity from existing cameras and wiring to new system. Install software on customner owned PC's. Configure system for use	16	85.00	1,360.00T

<b>Subtotal</b>	\$11,840.00
<b>Sales Tax (0.0%)</b>	\$0.00
<b>Total</b>	\$11,840.00

FSS Incorporated  
 30409 141 Ave  
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# Estimate

Date	Estimate #
7/18/19	1610

<b>Name / Address</b>
Jon Koch/Recycle center Muscatine Water Pollution Control 1202 Musser St Muscatine, IA 52761

<b>Project</b>

Item	Description	Qty	Rate	Total
	This quote is associated with the camera quote 1608 at WPCP, in that it shares software licensing and also can be viewed by the same users as needed. This new system at Transfer station, is also to be integrated with the old existing cameras at WPCP, which our company has the software, tools and training to do and will save expense versus a new vendor and camera system.			
AN AV08ZMD-400	Transfer station cameras: Arecont 4K dome camera w/ lens, 8/12MP above camera used in location 1	2	1,942.00	3,884.00T
AN AV10225 PM...	10M Megaview2 bullet camera 3648x2752, 7FPS, IR LED Array, DN, 4.7-9MM, F1.5 above camera used in locations 2,3,4	2	1,892.00	3,784.00T
3X VX-3P4-MB-I	3X outdoor bullet camera, 4MP with IR, 2.8 lens, IP66 rated above camera used in locations 5,6	2	741.00	1,482.00T
L/T-8 Port POE	Cam 7 and it's housing will come from the WPCP, and be installed here 8 port desktop poe smart switch w/ fiberoptic ports for camera power in head end room	1	389.95	389.95T
other hardware	M/M SFP module for above switch	1	127.00	127.00T
other hardware	8 port hardened switch w/ PoE power and fiberoptic ports for grind room	1	589.00	589.00T
other hardware	M/M SFP module for above switch		127.00	127.00T
other hardware	Fiberglas Adalet cabinet for switchgear in grind room Note: 120V power will need to be ran in to this cabinet near stairwell room	1	242.25	242.25T
OS camera hardwa...	camera installation parts and hardware	7	40.00	280.00T

<b>Subtotal</b>	
<b>Sales Tax (0.0%)</b>	
<b>Total</b>	

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# Estimate

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7/18/19	1610

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<b>Project</b>

Item	Description	Qty	Rate	Total
RWC CAT6 data ...	CAT 6 computer and data cable	2,000	0.41	820.00T
AN 370-COMOS...	M/M 6 strand fiber cable for interconnect between switches	350	1.29	451.50T
other hardware	Fiberoptic termination ends, supplies	2	40.00	80.00T
other hardware	1/2" EMT conduit and related hardware for wire run to camera 2 in dump area	30	18.00	540.00T
other hardware	1/2" EMT conduit and related hardware for wire run to cameras 3 and 4 exterior	15	18.00	270.00T
other hardware	3/4" EMT conduit and related hardware for wire and fiberoptic run for cam 6 and 7, and then on to head end recording room.	30	22.00	660.00T
AN X Pro + device	Xprotect professional + device license	7	159.00	1,113.00T
AN X protect 3 yr ...	3 year SUP Xprotect professional camera license upgrade program Note: uses base license from WPCP	7	59.00	413.00T
other hardware	Head end recording equipment: Windows Server 2016 OS 3U rack mount server case w/ 12GB backplane and hardware RAID controller. 2X480GB SSD HDD's for OS, 12X6TB SATA HDD's for video storage. RAID 10. Xeon processor, 32GB RAM, w/ fiber ports and HDMI video card. 2GB memory. Yield 36TB. 90 days storage. KB and mouse incl.	1	7,953.00	7,953.00T
LT UPS-2200APR	UPS-POW-2000 watt back up UPS and surge protector, with ASD software	1	699.00	699.00T
LGE-28LJ400B	LG brand 28 inch 13x66 (HD) 2 HDMI, USB video monitor Note: Client PC's provided by customer (existing)	1	249.00	249.00T

<b>Subtotal</b>			
<b>Sales Tax (0.0%)</b>			
<b>Total</b>			

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# Estimate

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7/18/19	1610

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<b>Project</b>

Item	Description	Qty	Rate	Total
Labor	Labor time: Install 750' EMT conduit as shown on map. Pull in wire and fiberoptic cable to camera locations (2 men X 4 days)	64	85.00	5,440.00T
OS misc hardware	Scissor man-lift rental 1 week	1	962.77	962.77T
Labor	Labor time: Install 7 new cameras and configure for use	21	85.00	1,785.00T
Labor	Labor time: Build recording server. install all software and updates. Configure recording parameters, install client software on existing customer-owned PC's. Integrate camera recording system with WPCP.	20	85.00	1,700.00T
RWC RG-6	Related operation: MOVE existing internet modem and cabling from office to new location with recording server RG-6 coax cable	50	0.38	19.00
RWC CAT6 data ...	CAT 6 computer and data cable	100	0.41	41.00
Labor	Labor time: MOVE existing equipment to consolidate	2	85.00	170.00T

<b>Subtotal</b>			\$34,271.47
<b>Sales Tax (0.0%)</b>			\$0.00
<b>Total</b>			\$34,271.47

Item	Justification	Cost est	Status	Appr
T42 Turbo Separator	Depackaging machine	\$336,945	-Verbal order-June 2019 -Approved drawings, Lana will check them soon and move it to the shop 8-5-19	7/3/19
Koala Consulting	Project management, much cheaper than Stanley to perform minimal tasks i.e. paper work, pay submittals, RFI, change orders outside Stanley contract	\$18,500	Conducted pre-con On-going work	
Terra Con	Concrete testing, outside contract	\$4,500		
Lighting	Lighting in the recycling center was not included in the contract, very poor lighting, damaged lights, needed for product placement in machine	\$107,000 entire facility (Transfer, Recycle, offices)	7/30/19 met with auditor, cost for entire facility by them (PQL). \$65K for equipment, will be seeking others for install cost compare. \$215 per light, \$20K rebate, save \$24K/yr.	
Ventilation/heating	The recycling center ventilation is in need of an overhaul, upgrade. It has not been evaluated or worked on for years. Probably functional but needs work	\$20,000 \$40-\$50K	7/30/19 seeking bid for radiant heat from contractor. Est \$40K-\$50K. Save \$5K-\$7K/mo during the winter	
End loader	To move material from the tip floor into the machine, looking for used to purchase per Finance	\$20,000 est		
Fork lift	Needed to move product out of trucks, with rotating forks to dump into machine. Looking to purchase used per Finance	\$10,000 est	Asking Raymond for donation	
Security cameras	Needed for vendor proof of destruction requirements and to keep stored food from being stolen for resale or personal use. Also monitoring off-loading at the WRRF, vac pad, septage camera replacement, compatible with current system. Current server is non-functioning, needed replacement 2 years ago. Vendor specific to tie to current system.	\$34,271 \$46,111	Updated 7/18/19 Xfer only  Updated 7/31/19 for plant and Xfer To Council 8/15/19	
Door locks	Door locks in recycling center in poor condition,	\$1,100	Installed, completed	

HSW Project Equipment and Services. Items outside contractor bid known at this time and estimated costs 7/1/19

Aggregate	Base for the truck off-loading site at the WRRF. Earth work to be performed by City. May pave in the future but this saves cost of contractor performing work	\$20,000	Rough design by City engineer	
Pole building/FOG receiving	A building and pad are needed to house the liquid/FOG receiving bar screen for winter freeze protection. Two trucks will connect. This was removed in the project 3.0a to reduce cost to current contract 3.0b.	\$50,000	7/30/19 seeking bids for trough configuration	
Flow meters and piping	Meters to measure off-loading trucks for accurate billing.	\$7,000		
Bollards	Bollards to protect light poles, buildings, etc from new truck traffic at WRRF, Recycling Center	\$3,000		
Safety Kleen	Remove hydraulic fluid from old baler pit to fill and repair at the Xfer	\$1,000	Estimate 7/31/19	
<b>Total</b>		<b>\$675,156</b>	<b>08/12/19</b>	