

REQUEST FOR COUNCIL ACTION

DATE:	TITLE:		
December 15, 2015	Transformer Maintenance		
ORIGINATING DEPARTMENT:	TYPE OF ACTION:	<input type="checkbox"/> ORDINANCE	<input type="checkbox"/> RESOLUTION
Electric Department		<input checked="" type="checkbox"/> FORMAL ACTION	<input type="checkbox"/> OTHER

RECOMMENDATION:

I recommend that the city council either approve:

Option 1: Hot Oil Process to remove moisture and gasses in the amount of \$13,950.00 from Solomon Corporation.

Option 2: Drain and dispose of existing oil and retro-fill with FR-3 for the amount of \$57,250.00 from Solomon Corporation.

FISCAL NOTE:

Funding is available under all three System Departments.

DISCUSSION:

Respectfully submitted,

Glenn Rodden
City Administrator

502 East 12th Street
Beloit, Kansas 67420



Tel No (785) 738-3781
Fax No (785) 738-2290

TO: City Administrator and City Council
FROM: Ronald Sporleder
Director of System Operations
RE: Transformer Maintenance
DATE: December 10, 2015

Glenn and City Council,

I am recommending that the 12.5/2.4 High/Low Voltage Transformer be Retro-Filled with FR-3 transformer oil due to high moisture in the transformer.

The transformers at the Power Plant are tested yearly by SD Myers. The testing has been showing high moisture content for the last several years. The results were sent to Solomon Corporation for analysis and it is their opinion that this needs to be addressed. High moisture is damaging to the paper insulation of the transformer, reducing its life. We are recommending using the FR-3 oil as it will pull the moisture out of the transformer. Changing the oil (Option 1) will pull the moisture out of the transformer oil but will not pull the moisture out of the paper insulation. This oil would also require extensive clean up if there should be a leak. The FR-3 oil (Option 2) will pull the moisture out of the oil and the paper insulation and extend the life of the transformer. The flash point is also lower which will keep it from burning easier. This is due to the oil being soybean based. The transformer currently in use is sitting close to the building. By going with option 2, we would be taking the more volatile oil away from the building and replacing it with the soybean based oil. The work would probably be done during the springtime when the temperature would be 50-60 deg., possibly March or April. There is an additional transformer that has the more volatile oil in it. It would be our recommendation to change this to the FR-3 oil when the oil is due to be replaced. The cost of a new transformer is \$250,000.00 plus the cost of shipping, crane rental fees and manpower to switch it over. The estimated cost of shipping, crane rental and manpower would be \$200,000.00. The total estimated cost would be \$450,000.00. The cost of the transformer was quoted to us by Solomon Corporation on 12/10/15.

Solomon Corporation

Option 1 - \$13,950.00

Mobilize technicians and equipment to job site.
Hot Oil Process Unit to remove moisture & gasses

Option 2 - \$57,250.00

Mobilize technicians and equipment to job site.
Drain & dispose of existing oil
Retro-Fill with FR-3

Ronald Sporleder
Director of Systems Operations



December 8, 2015

City of Beloit, KS

Manny Lomax

RE: DGA Test Reports

Dear Manny,

After reviewing the DGA Test Reports that were sent to Solomon Corporation on December 3, I would recommend retest on each unit in one year.

The only other remarkable unit is TC1 transformer. The moisture is high, and has been high for several years. It does not appear to be going up, but high moisture is damaging to the paper insulation of the transformer, reducing it's life. I suggest the City of Beloit consider some form of dryout, either with our processing rig, or a smaller, long term dryout device. Retrofilling with FR-3 would also be an option.

Please let me know if there are any questions.

Thank you,

Tim Cornelius Sr.
Technical Specialist



800-234-2867, Ext. 151
Cell 785-452-1742 • Fax 785-655-2502
www.solomoncorp.com
tcornelius@solomoncorp.com

cdc

When it's on the line.



December 8, 2015

Beloit City Hall
Beloit, KS
Attn: Manny Lomax

RE: 12 MVA Substation
Serial# 6993837

Solomon Corporation offers the following Field Service Quotation for your consideration:

Option #1 - Scope of Work:

- ~ Mobilize technicians and equipment to the job site.
- ~ Hot Oil Process Unit to Remove Moisture & Gasses

Cost: \$13,950.00

Option #2- Scope of Work:

- ~ Mobilize technicians and equipment to the job site.
- ~ Drain & Dispose of Existing Oil
- ~ Retro-Fill with FR-3

Cost: \$57,250.00

Please call me at 1-800-234-2867 (ext. 193) if you have any questions.

Thank you,

Heath Funston - Territory Manager
email: hfunston@solomoncorp.com
1-800-234-2867 ext. 193

HF/cdc

beloitsystems@nckcn.com

From: Cassi Cook <ccook@solomoncorp.com>
Sent: Thursday, December 10, 2015 9:49 AM
To: beloitsystems@nckcn.com
Cc: Heath Funston
Subject: City of Beloit, KS (12 MVA Substation Quote, FR3 Fluid information)
Attachments: 12 MVA Substation Replacment - Budgetary.pdf; FR3 Higher Temperature Ability and Moisture Removal 12102015.pdf; FR3 - 1.pdf; FR3 - 2.pdf; FR3 - 3.pdf

Good Morning Ron,

Attached is the quote you requested for the replacement and salvage value of your 12 MVA Substation. I have also attached information on the benefits of FR3 Envirotemp Fluid.

If you have any questions, please contact Heath (ext. 193) or myself, at 1-800-234-2867.

Thank you!

Cassi Cook
Sales Assistant



800-234-2867, Ext. 480
Fax 785-655-2502
www.solomoncorp.com
ccook@solomoncorp.com

***Please take a minute to watch our video:** <http://www.solomoncorp.com/about-us/video/>

SOLOMON
CORPORATION



When it's on the line.

December 10, 2015

Attn: Ron Sporleder
Beloit City Hall
Beloit, KS

RE: Replacement unit - Budgetary Pricing

Solomon Corporation offers the following quotation for your consideration.

- 1) 12000/15000 KVA Three Phase Substation Transformer
Primary Voltage: 12470 Delta (95 KV BIL)
Secondary Voltage: 2400Y/1385 (60 KV BIL)
Primary Taps: 2-2.5% FCAN & BN
65 Degree C Rise OA/FA, 60 Hertz, Standard Impedance
Cover Mounted Primary Bushings (Studs) - ANSI Seg #3
Cover Mounted Secondary Bushings (Studs) - ANSI Seg #1
Liquid Level Gauge with Contacts
Liquid Temperature Gauge with Contacts
Pressure Vacuum Gauge with Contact & Bleeder Assembly
Pressure Relief Device with Contacts
Drain Valve and Sampler
Cooling Fans & Controls
Inspection Lid, Lifting Facilities
New Copper Circular Disk Primary Windings
New Copper Circular Disk Secondary Windings
Non-PCB Mineral Oil

Standard Factory Tests:	Turn Ratio Test	Megohm Insulation Test	Resistance Tests
	Excitation Test	No-Load Losses	Full-Load Losses
	Impedance	Induced Potential	Applied Potential
	Doble Power Factor		

PRICE: \$250,000.00

SHIPMENT: 14-15 Weeks ARO

WARRANTY: 12 Months

FOB: Freight Allowed to Beloit, KS

TERMS: Net 30 Days with prior approved credit

(Unit quoted subject to availability.)

~ Pricing good for 30 days!

Note: In order to stay within dimensional requirements for shipment by truck, some parts may be shipped separately and will require installation on site. The installation of these parts is the customer's responsibility. Our field service department can install these components and perform field acceptance testing which includes TTR, Meg & Doble for an additional charge. The customer will be responsible for unloading at the job site.

Page 2

The current Salvage Value for the 12000 KVA Substator:

\$9,000.00

Bid Assumptions:

- Beloit City Hall will be responsible for loading the unit onto Solomon Corporation carrier.
- Solomon Corporation will be responsible for the freight.
- Unit is less than 50ppm PCB's.
- Beloit City Hall will be responsible for providing PCB documentation.
- Quotes are valid for 30 days.

****Solomon Corporation will charge \$0.30 per lb for units testing 50-499ppm PCB's and \$1.05 per lb for units testing greater than 500ppm PCB's.***

Please call me at 1-800-234-2867 (ext. 193) if you have any questions.

Thank you,

Heath Funston - Territory Manager
email: hfunston@solomoncorp.com
1-800-234-2867 ext. 193

HF/cdc

When it's on the line.



**Standard Terms and Conditions of Sale
Updated, May 2011**

Terms of Offer: This quotation constitutes an offer to sell according to the terms included. The offer is good for 30 days from the date of quotation and shall be deemed accepted upon receipt and acceptance of a purchase order. The buyer will be deemed to have assented to all terms and conditions contained herein

Payment terms: Standard payment terms are net 30 days, pending credit approval of the buyer. Solomon Corporation reserves the right to require prepayment or progress payments for products and services of substantial size or financial risk. Any extension beyond these standard payment terms must be approved in writing prior to acceptance of an order. In the event Buyer fails to make payment when due, the buyer's entire account becomes immediately due and payable, and all amount are subject to service charges at the maximum contract rate permissible by law.

Order Cancellation: Orders cancelled after the acceptance of buyer's purchase order will be subject to appropriate cancellation or re-stocking charges. The charges will be dependent on the amount of labor and material expense, including design, engineering and administrative work, that has been completed at the time of order cancellation.

Shipments: All products are shipped FOB buyers designated delivery point unless otherwise specified. Freight charges are included in the purchase price unless otherwise specified in the price quotation. The buyer is responsible for providing labor and equipment to unload Solomon Corporation's truck. Solomon Corporation at its discretion may contract transportation and delivery with outside carriers.

Rescheduled or delayed shipments: Buyer may delay or reschedule shipment without penalty if the delay is within 30 days of the original scheduled delivery date. Delays beyond 30 days may require invoicing, payment and storage charges per Solomon Corporation's Storage policy.

Seller will make a good faith effort to complete delivery of the products and services on the scheduled date, but seller assumes no responsibility or liability for inability to deliver for reasons beyond the control of the Seller, unless otherwise agreed to in writing. **The Seller is not liable for any incidental, consequential or liquidated damages arising from delays or failure to give notice of delay.**

Inspection and acceptance: the Buyer shall have seven days from the date of delivery to report any damage, defects or nonconformance that is discernable at the time of inspection. After seven days the buyer is deemed to have accepted the product.

Warranties: Solomon Corporation warrants, to the original purchaser only, that the products and services provided will be free from defects in material or workmanship. The duration of the warranty is one year from the date of delivery or completion of services, unless otherwise specified in the quotation. In the event that the product or service does not conform to specification or is defective in material or workmanship, Solomon Corporation will make the necessary repairs at its own expense. If Solomon Corporation is unable to successfully resolve the issue after a reasonable number of attempts, Solomon Corporation will provide at its option, replacement products, or a full refund of the purchase price. These are the purchaser's exclusive remedies for breach of warranty.

In the event that all or a portion of the products purchased are manufactured by others, the buyer's warranty is with the original manufacturer of those products and subject to the warranty terms and conditions of that manufacturer. Solomon Corporation, as a seller of products manufactured by others, will assist buyer in remediation of warranty claims, but in no circumstance is liable to fulfill the warranty obligation of those manufacturers or to cover expenses that are not covered by original manufacturers' warranty.

Solomon Corporation does not warrant:

- 1) Any product, not manufactured by Solomon Corporation
- 2) That the specification provided by the purchaser are accurate, or fit for a particular use
- 3) Damage caused by failure to provide a suitable installation environment
- 4) Damage caused by use for purposes other than those for which it was designed
- 5) Damage caused by accidents or disasters such as fire, flood, wind and lightning
- 6) Damage caused by unauthorized attachments or modification
- 7) Damage caused by vandalism

Solomon Corporation shall in no event be liable for incidental or consequential damages. The seller makes no warranty of the merchantability, or fitness for a particular purpose or any other warranty either expressed or implied.

#

When it's on the line.



Storage Policy
Updated, May 2011

Solomon Corporation strives to be flexible with customers and accommodate changes in construction and delivery schedules. We do, however, incur additional costs in storage, security, handling, and interest, on large units that are completed, but for which customers are not ready to take delivery. Similarly, we store a large number of customer-owned units that have been evaluated for repair, but for which repair work has not been approved. This policy has been developed to balance the flexibility needs of our customers with the cost and risk associated with holding and storing large units.

Completed Units: In the event that delivery cannot be accepted upon completion of manufacture, Solomon Corporation will hold the unit, for up to 30 days beyond the scheduled delivery date at no charge to the customer. If delivery is delayed beyond 30 days, Solomon Corporation will:

- 1) Invoice the unit for payment per the terms (net 30 days unless otherwise agreed to). Or, assess interest charges at a rate of one-half of one percent per month.
- 2) Assess a one-time set-up charge of \$3000 to prepare the unit for storage
- 3) Assess a storage fee of one-half of one percent per month with a minimum storage fee of \$500/month. After six months, the storage fee increases to one percent per month with a minimum of \$1000/month.

Title passes to the Purchaser at the time the equipment is placed into storage, however, Solomon Corporation will insure the equipment from damage until it is received and accepted at the destination as originally quoted. Warranty starts upon arrival at the destination or six months after completion of manufacture, whichever occurs first.

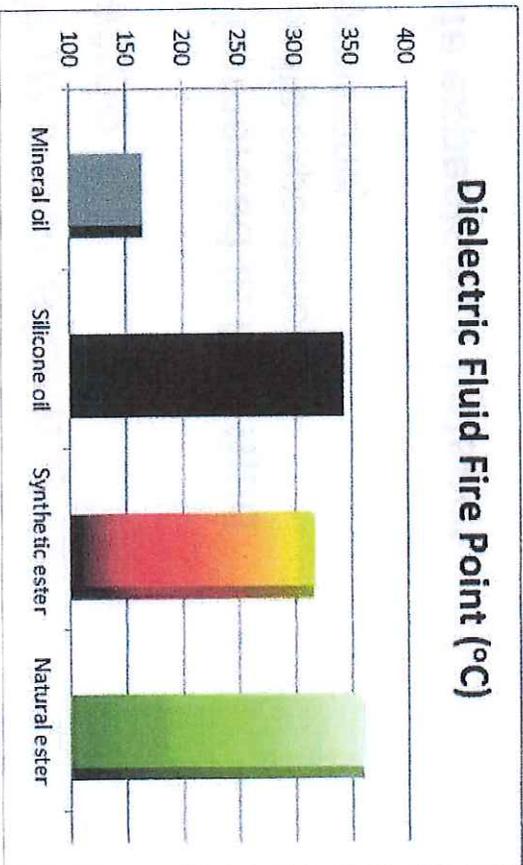
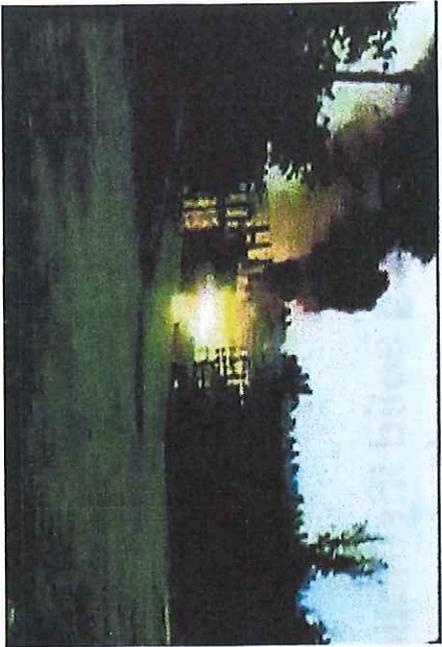
Units Evaluated for Repair

For customer-owned units that have been evaluated for repair, Solomon Corporation will hold and store the unit for 120 days from the date that the evaluation and repair quotation are sent to the customer. After 120 days, the customer will be given the following three options:

- 1) Authorize the repair, The unit will be repaired and returned to the customer
- 2) Authorize the return of the unit unrepaired to the customer's site. Customer will be billed for transportation to and from our facility and evaluation charges.
- 3) Authorize the salvage of the unit. Customer will be paid the salvage value of the unit net of freight in and evaluation charges.

#

“Fires (Don’t Have to) Happen” - ZERO (0) fire history



- FM Global Recognition of Fire Safety
 - Reduced clearances to buildings and other equipment
 - Eliminate deluge systems
 - No fire walls required



Underwriters Laboratories Classified
Less Flammable Fluid



APPROVED

Factory Mutual Research Corporation
Approved Less Flammable Fluid



FR3 Fluid Enhances Paper Life

- **The primary failure mode in a transformer is insulation paper degradation**
- Paper aging is reduced when immersed in FR3 fluid
 - Kraft Paper → 5.3x longer life expectancy
 - TUK → 7.4x longer life expectancy
- For keeping solid insulation life expectancy, hotspot temperature can be increased
 - Kraft Paper → + 15.7°C for same life expectancy
 - TUK → + 20.6°C for same life expectancy

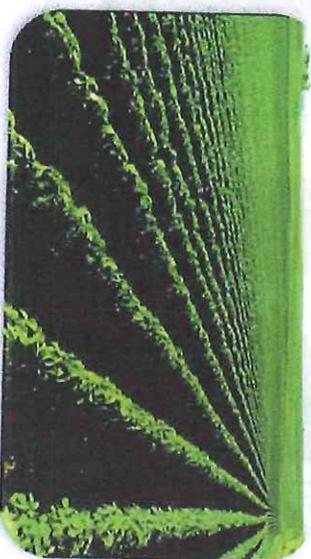
Improve reliability: Extend insulation and asset life 5-8x longer than mineral oil

PROTECTING LIFE OF INSULATION PAPER IS THE NUMBER ONE FACTOR THAT DETERMINES ASSET LIFE

FR3™ natural ester fluid vs. Mineral oil
Sealed Tube Test – ML 152-2000

 FR3 Fluid Upgraded Paper 500 hr @ 170° C	 Mineral Oil	 FR3 Fluid Upgraded Paper 1000 hr @ 170° C	 Mineral Oil	 FR3 Fluid Upgraded Paper 2000 hr @ 170° C	 Mineral Oil	 FR3 Fluid Upgraded Paper 4000 hr @ 170° C	 Mineral Oil
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FR3 fluid best-in-class environmental properties



- Sustainable supply
- Made from renewable, biobased resource
 - >98% vegetable oil
 - Carbon neutral*
 - Contains no halogens, silicones or sulfurs
- Petroleum independent
- Non-toxic, non-hazardous in water and soil
- Biodegrades in less than 28 days
 - Ultimately biodegradable according Environmental Protection Agency (EPA)
- Recyclable



* According to BEES 4.0 lifecycle analysis



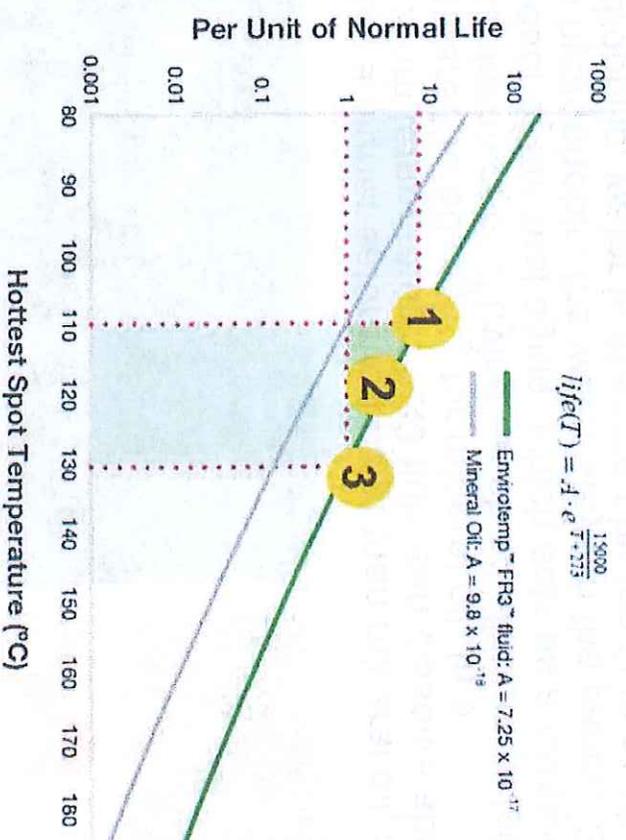
BEES[®] 4.0



FR3 fluid has higher hot spot capability to increase load capacity

LIFE "TRIANGLE" ENABLES FLEXIBILITY TO EXTEND ASSET LIFE OR INCREASE LOAD

- IEEE C57.154 High temperature insulation system standard
 - Current standard 110°C hot spot with 65 AWR limits transformer capability
 - FR3 fluid in TR designed for mineral oil will extend insulation system life
 - Envirotemp™ FR3™ fluid-based insulation systems can be run 20°C warmer without degrading life



Since FR3 fluid attracts moisture, how does that impact transformer performance?

FR3 fluid doesn't "attract" water/moisture; it has a higher saturation point than mineral oil, and it is more tolerant of water than mineral oil. At room temperature, FR3 fluid can dissolve about 1000 mg/kg of water to become saturated compared to 60 mg/kg for mineral oil. In a transformer, water moves between the solid insulation and oil trying reach equilibrium (relative saturation). Paper produces water as a by-product of thermal aging, which acts as a catalyst for continued degradation. Because mineral oil is hydrophobic, the water stays in the paper. Since Envirotemp™ FR3™ fluid is comparatively hydrophilic, water is absorbed by the fluid or wicked away from the insulation paper. So, in general, an insulation system will be dryer (lower % saturation) with natural esters. Subsequently, the solid insulation system will age more slowly when it is dryer. Natural esters, in effect, dry out the transformer.

As a result, IEEE C57.154 (high temperature insulation systems) validates the enhanced aging/loadability capabilities of FR3 fluid, declaring an FR3 fluid filled transformer can run 20°C warmer than mineral oil while not accelerating aging.

A wet mineral oil filled transformer loses its dielectric strength very quickly.

If FR3 fluid has high acid levels, how do I process my fluid?

As a result of hydrolysis (the consumption of H₂O and production of non-reactive, long chain fatty acids) during the aging process, FR3 fluid will possess higher acid levels than mineral oil.

However, mineral oil produces reactive, short chain acids, which can be corrosive to the transformer interior. FR3 fluid produces non-harmful, long-chain acids. So, "high acid levels" in FR3 fluid isn't a concern; it proves that the solid insulation system is aging more slowly.

Furthermore, high acid levels in FR3 fluid from hydrolysis combined with high operating temperature of a transformer has proved to be beneficial to the solid insulation system (cellulose) through a reaction called transesterification. While secondary to hydrolysis, it has a stabilizing effect on insulation aging.

FR3 fluid can be processed using common (to mineral oil) equipment, materials, and processes, including "reconditioning" (via degassing equipment) and "reclaiming" (using Fuller's Earth or Bauxite).

REQUEST FOR COUNCIL ACTION

DATE:	TITLE:		
December 15, 2015	CEREAL MALT BEVERAGE LICENSES		
ORIGINATING DEPARTMENT:	TYPE OF ACTION:	<input type="checkbox"/> ORDINANCE	<input type="checkbox"/> RESOLUTION
Administration		<input checked="" type="checkbox"/> FORMAL ACTION	<input type="checkbox"/> OTHER

RECOMMENDATION:

I recommend that the Council approve the distribution of cereal malt beverage licenses as follows:

- Arlyn Mead, doing business as Beloit Bowl
- Pamela McCormack DBA Casey's Retail Company, 1323 E. Main
- Pamela McCormack DBA Casey's Retail Company, 806 N Independence
- Joe Kindscher, doing business as Pump Mart
- Michael D. Shamburg, doing business as Shamburg Oil, Inc.
- Mitchell County Fair Association
- Ana Leon, doing business as El Puertos
- Jeff Heiman DBA Bubba Q's
- Mohammed Nobi DBA Mac's Kwik Stop
- Charles Lawrence DBA Shopko Hometown #537

FISCAL NOTE:

- There is no direct cost associated with approval of this item.
- The cost for a cereal malt beverage license ranges from \$75 to \$150 per year, based upon the category of CMB license for which the applicant applies. This item is budgeted in line item 10-00-3211 (General Fund-Revenue-Alcohol Licenses). We typically receive \$1,000 of revenue from alcohol licenses.

DISCUSSION:

Each year, applications for Cereal Malt Beverage licenses are screened for potential violations. There are approximately 10 categories under which a person could be disqualified from a CMB license. State Law (K.S.A. 41-2703) governs the manner in which licenses are approved or disapproved. City Attorney Katie Shroeder reviewed each application for acceptance and issuance of a license. Additionally, Police Chief Dave Elam found no violations during the screening process. Therefore, I recommend that the Council approve cereal malt beverage licenses as listed above.

Respectfully submitted,

Glenn Rodden
City Administrator

P O Box 591
Beloit, Kansas 67420



Tel No (785) 534-1290
Fax No (785) 534-1291

December 9, 2015

Katie J. Schroeder
CITY ATTORNEY

Amanda J. Lomax
City Clerk
119 N. Hersey
Beloit, KS 67420

In Re: Cereal Malt Beverage License Applications

Dear Amanda:

I have reviewed the cereal malt beverage license applications submitted for approval.

Please keep in mind that any manager, officer, or director listed on the application needs to fit the criteria set forth in the Beloit City Code and Cereal Malt Beverage Act regarding previous alcohol related convictions. The same background check should be done for each owner, manager, officer, and director. Assuming your background checks do not reveal any recent alcohol convictions, the following applications are in proper order and ready for acceptance and issuance of a license:

1. **Arlyn Mead dba Beloit Bowl**
2. **Casey's Retail Company, 1323 E. Main**
3. **Casey's Retail Company, 806 N. Independence**
4. **Joe Kindscher dba Pump Mart**
5. **Shamburg Oil Co., Inc.**
6. **Mitchell County Fair Association**
7. **Ana D. Leon dba El Puertos**
8. **Shopko Stores Operating Co., LLC**
9. **Bubba Q's**
10. **Mac's Kwik Shop, Inc.**

Please contact me with any questions or concerns you may have regarding these applications or the approval process.

Sincerely,

A handwritten signature in cursive script that reads "Katie J. Schroeder".

Katie J. Schroeder
Beloit City Attorney

1716 North Hersey Avenue
Beloit, Kansas 67420



Tel No (785) 738-2203
Fax No (785) 738-2759

Chief

bpdchief@nckcn.com

Memorandum

To: Beloit City Council
Mayor Tom Naasz

CC: Glenn Rodden, City Administrator

From: Chief Dave Elam

Date: December 10, 2015

RE: Cereal Malt Beverage License

The applications for cereal malt beverage licenses within the city limits of Beloit have been checked and reviewed for criminal violations, which would provide cause for not issuing said license. I find no violations of the sort and would support, if the governing body chooses, the following for cereal malt beverage licensing.

Arlyn Mead DBA Beloit Bowl
Joe Kindscher DBA Pump Mart
Mitchell County Fair Association
Ana Leon DBA El Puertos
Michael Shamburg DBA Shamburg Oil
Pamela McCormack DBA Casey's General Stores East & West
Jeff Heiman DBA Bubba Q's
Mohammed Nobi DBA Mac's Kwik Stop
Charles Lawrence DBA Shopko Hometown #537

A handwritten signature in black ink that reads "Dave Elam".
Dave Elam
Chief of Police
Beloit Police Department

ITEMS FOR COUNCIL DISCUSSION

DATE:

December 15, 2015

TITLE:

WORK SESSION DISCUSSION

DISCUSSION:

Items for discussion at the December 15th, 2015 Work Session will include the following:

1. Refinancing Revenue Bonds for the Cooling Towers –

Enclosed is information that we received from the city's financial adviser Dustin Avey. Dustin is recommending that we take advantage of low interest rates and refinance the 2011 electric revenue bond issue. Dustin included a calendar of events and a preliminary debt schedule for the refinance.

2. Police Radios

Respectfully submitted,

Glenn Rodden
City Administrator

SUMMARY OF BONDS REFUNDED

City of Beloit, Kansas
 General Obligation Electric Utility System Refunding Bonds
 Series 2016-A (Refunding Series 2011 Electric Utility System Revenue Bonds)
 -Preliminary, 'A' Rated, BQ-

Bond	Maturity Date	Interest Rate	Par Amount	Call Date	Call Price
Electric Utility System Revenue Bonds, 2011:					
SERIAL	12/01/2016	2.250%	170,000.00		
	12/01/2017	2.500%	175,000.00		
	12/01/2018	2.750%	180,000.00		
	12/01/2019	3.000%	185,000.00	12/01/2018	100.000
	12/01/2020	3.250%	190,000.00	12/01/2018	100.000
	12/01/2021	3.500%	195,000.00	12/01/2018	100.000
	12/01/2022	3.750%	205,000.00	12/01/2018	100.000
TERM	12/01/2026	4.500%	900,000.00	12/01/2018	100.000
TERM02	12/01/2031	4.750%	1,385,000.00	12/01/2018	100.000
			3,585,000.00		

PRIOR BOND DEBT SERVICE

City of Beloit, Kansas
 General Obligation Electric Utility System Refunding Bonds
 Series 2016-A (Refunding Series 2011 Electric Utility System Revenue Bonds)
 -Preliminary, 'A' Rated, BQ-

Period Ending	Principal	Coupon	Interest	Debt Service	Annual Debt Service
06/01/2016			72,837.50	72,837.50	
12/01/2016	170,000	2.250%	72,837.50	242,837.50	315,675.00
06/01/2017			70,925.00	70,925.00	
12/01/2017	175,000	2.500%	70,925.00	245,925.00	316,850.00
06/01/2018			68,737.50	68,737.50	
12/01/2018	180,000	2.750%	68,737.50	248,737.50	317,475.00
06/01/2019			66,262.50	66,262.50	
12/01/2019	185,000	3.000%	66,262.50	251,262.50	317,525.00
06/01/2020			63,487.50	63,487.50	
12/01/2020	190,000	3.250%	63,487.50	253,487.50	316,975.00
06/01/2021			60,400.00	60,400.00	
12/01/2021	195,000	3.500%	60,400.00	255,400.00	315,800.00
06/01/2022			56,987.50	56,987.50	
12/01/2022	205,000	3.750%	56,987.50	261,987.50	318,975.00
06/01/2023			53,143.75	53,143.75	
12/01/2023	210,000	4.500%	53,143.75	263,143.75	316,287.50
06/01/2024			48,418.75	48,418.75	
12/01/2024	220,000	4.500%	48,418.75	268,418.75	316,837.50
06/01/2025			43,468.75	43,468.75	
12/01/2025	230,000	4.500%	43,468.75	273,468.75	316,937.50
06/01/2026			38,293.75	38,293.75	
12/01/2026	240,000	4.500%	38,293.75	278,293.75	316,587.50
06/01/2027			32,893.75	32,893.75	
12/01/2027	250,000	4.750%	32,893.75	282,893.75	315,787.50
06/01/2028			26,956.25	26,956.25	
12/01/2028	265,000	4.750%	26,956.25	291,956.25	318,912.50
06/01/2029			20,662.50	20,662.50	
12/01/2029	275,000	4.750%	20,662.50	295,662.50	316,325.00
06/01/2030			14,131.25	14,131.25	
12/01/2030	290,000	4.750%	14,131.25	304,131.25	318,262.50
06/01/2031			7,243.75	7,243.75	
12/01/2031	305,000	4.750%	7,243.75	312,243.75	319,487.50
	3,585,000		1,489,700.00	5,074,700.00	5,074,700.00

SAVINGS

City of Beloit, Kansas
 General Obligation Electric Utility System Refunding Bonds
 Series 2016-A (Refunding Series 2011 Electric Utility System Revenue Bonds)
 -Preliminary, 'A' Rated, BQ-

Date	Prior Debt Service	Prior Receipts	Prior Net Cash Flow	Refunding Debt Service	Savings	Present Value to 03/01/2016 @ 2.6036355%
12/01/2016	315,675.00	1,550.63	314,124.37	295,475.00	18,649.37	18,871.93
12/01/2017	316,850.00	2,067.50	314,782.50	288,000.00	26,782.50	25,825.92
12/01/2018	317,475.00	2,067.50	315,407.50	289,300.00	26,107.50	24,533.68
12/01/2019	317,525.00	2,067.50	315,457.50	288,600.00	26,857.50	24,592.26
12/01/2020	316,975.00	2,067.50	314,907.50	292,750.00	22,157.50	19,809.43
12/01/2021	315,800.00	2,067.50	313,732.50	291,600.00	22,132.50	19,281.87
12/01/2022	318,975.00	2,067.50	316,907.50	290,300.00	26,607.50	22,544.64
12/01/2023	316,287.50	2,067.50	314,220.00	288,850.00	25,370.00	20,949.64
12/01/2024	316,837.50	2,067.50	314,770.00	292,250.00	22,520.00	18,127.16
12/01/2025	316,937.50	2,067.50	314,870.00	290,350.00	24,520.00	19,203.23
12/01/2026	316,587.50	2,067.50	314,520.00	288,300.00	26,220.00	19,983.88
12/01/2027	315,787.50	2,067.50	313,720.00	290,500.00	23,220.00	17,245.46
12/01/2028	318,912.50	2,067.50	316,845.00	291,750.00	25,095.00	18,138.67
12/01/2029	316,325.00	2,067.50	314,257.50	292,000.00	22,257.50	15,674.32
12/01/2030	318,262.50	2,067.50	316,195.00	291,200.00	24,995.00	17,133.15
12/01/2031	319,487.50	415,567.50	-96,080.00		-96,080.00	-63,874.04
	5,074,700.00	446,063.13	4,628,636.87	4,361,225.00	267,411.87	238,041.19

Savings Summary

PV of savings from cash flow	238,041.19
Plus: Refunding funds on hand	3,772.25
Net PV Savings	241,813.44

SUMMARY OF REFUNDING RESULTS

City of Beloit, Kansas
General Obligation Electric Utility System Refunding Bonds
Series 2016-A (Refunding Series 2011 Electric Utility System Revenue Bonds)
-Preliminary, 'A' Rated, BQ-

Dated Date	03/01/2016
Delivery Date	03/01/2016
Arbitrage yield	2.603636%
Escrow yield	1.133622%
Value of Negative Arbitrage	138,293.82
Bond Par Amount	3,400,000.00
True Interest Cost	2.838505%
Net Interest Cost	2.937380%
Average Coupon	3.426216%
Average Life	8.251
Par amount of refunded bonds	3,585,000.00
Average coupon of refunded bonds	4.460141%
Average life of refunded bonds	9.089
PV of prior debt to 03/01/2016 @ 2.603636%	4,136,286.14
Net PV Savings	241,813.44
Percentage savings of refunded bonds	6.745145%
Percentage savings of refunding bonds	7.112160%

SOURCES AND USES OF FUNDS

City of Beloit, Kansas
 General Obligation Electric Utility System Refunding Bonds
 Series 2016-A (Refunding Series 2011 Electric Utility System Revenue Bonds)
 -Preliminary, 'A' Rated, BQ-

Dated Date 03/01/2016
 Delivery Date 03/01/2016

Sources:

Bond Proceeds:	
Par Amount	3,400,000.00
Premium	171,143.00
	<u>3,571,143.00</u>

Other Sources of Funds:	
Transfer from Prior DSRF	413,500.00

3,984,643.00

Uses:

Refunding Escrow Deposits:	
Cash Deposit	10.75
SLGS Purchases	3,898,930.00
	<u>3,898,940.75</u>

Cost of Issuance:	
Bond Counsel	25,000.00
Rating Agency Fee	12,000.00
Paying Agent	4,000.00
Escrow Agent	2,000.00
Escrow Verification	2,000.00
CUSIP Fee	1,000.00
Miscellaneous	500.00
Publications	500.00
Kansas State Treasurer Setup Fee	300.00
Transcript Approval	300.00
Bond Printing	270.00
Bond Registration	30.00
Bond Redemption	30.00
	<u>47,930.00</u>

Underwriter's Discount:	
(\$10 / 1000)	34,000.00

Other Uses of Funds:	
Additional Proceeds	3,772.25

3,984,643.00

BOND DEBT SERVICE

City of Beloit, Kansas
 General Obligation Electric Utility System Refunding Bonds
 Series 2016-A (Refunding Series 2011 Electric Utility System Revenue Bonds)
 -Preliminary, 'A' Rated, BQ-

Period Ending	Principal	Coupon	Interest	Debt Service	Annual Debt Service
06/01/2016			26,825	26,825	
12/01/2016	215,000	2.000%	53,650	268,650	295,475
06/01/2017			51,500	51,500	
12/01/2017	185,000	2.000%	51,500	236,500	288,000
06/01/2018			49,650	49,650	
12/01/2018	190,000	3.000%	49,650	239,650	289,300
06/01/2019			46,800	46,800	
12/01/2019	195,000	3.000%	46,800	241,800	288,600
06/01/2020			43,875	43,875	
12/01/2020	205,000	3.000%	43,875	248,875	292,750
06/01/2021			40,800	40,800	
12/01/2021	210,000	3.000%	40,800	250,800	291,600
06/01/2022			37,650	37,650	
12/01/2022	215,000	3.000%	37,650	252,650	290,300
06/01/2023			34,425	34,425	
12/01/2023	220,000	3.000%	34,425	254,425	288,850
06/01/2024			31,125	31,125	
12/01/2024	230,000	3.000%	31,125	261,125	292,250
06/01/2025			27,675	27,675	
12/01/2025	235,000	3.000%	27,675	262,675	290,350
06/01/2026			24,150	24,150	
12/01/2026	240,000	3.250%	24,150	264,150	288,300
06/01/2027			20,250	20,250	
12/01/2027	250,000	3.500%	20,250	270,250	290,500
06/01/2028			15,875	15,875	
12/01/2028	260,000	3.750%	15,875	275,875	291,750
06/01/2029			11,000	11,000	
12/01/2029	270,000	4.000%	11,000	281,000	292,000
06/01/2030			5,600	5,600	
12/01/2030	280,000	4.000%	5,600	285,600	291,200
	3,400,000		961,225	4,361,225	4,361,225

BOND PRICING

City of Beloit, Kansas
 General Obligation Electric Utility System Refunding Bonds
 Series 2016-A (Refunding Series 2011 Electric Utility System Revenue Bonds)
 -Preliminary, 'A' Rated, BQ-

Bond Component	Maturity Date	Amount	Rate	Yield	Price	Yield to Maturity	Call Date	Call Price	Premium (-Discount)	Principal Cost
Serial Bond:										
	12/01/2016	215,000	2.000%	0.900%	100.819				1,760.85	216,760.85
	12/01/2017	185,000	2.000%	1.250%	101.293				2,392.05	187,392.05
	12/01/2018	190,000	3.000%	1.450%	104.162				7,907.80	197,907.80
	12/01/2019	195,000	3.000%	1.600%	105.074				9,894.30	204,894.30
	12/01/2020	205,000	3.000%	1.750%	105.672				11,627.60	216,627.60
	12/01/2021	210,000	3.000%	2.050%	105.126				10,764.60	220,764.60
	12/01/2022	215,000	3.000%	2.200%	104.990				10,728.50	225,728.50
	12/01/2023	220,000	3.000%	2.350%	104.578				10,071.60	230,071.60
	12/01/2024	230,000	3.000%	2.500%	103.905				8,981.50	238,981.50
	12/01/2025	235,000	3.000%	2.600%	103.422				8,041.70	243,041.70
	12/01/2026	240,000	3.250%	2.800%	104.149				9,957.60	249,957.60
	12/01/2027	250,000	3.500%	2.900%	105.504	C 2.942%	12/01/2026	100.000	13,760.00	263,760.00
	12/01/2028	260,000	3.750%	2.950%	107.320	C 3.052%	12/01/2026	100.000	19,032.00	279,032.00
	12/01/2029	270,000	4.000%	3.050%	108.647	C 3.217%	12/01/2026	100.000	23,346.90	293,346.90
	12/01/2030	280,000	4.000%	3.100%	108.170	C 3.296%	12/01/2026	100.000	22,876.00	302,876.00
		3,400,000							171,143.00	3,571,143.00

Dated Date	03/01/2016	
Delivery Date	03/01/2016	
First Coupon	06/01/2016	
Par Amount	3,400,000.00	
Premium	171,143.00	
Production	3,571,143.00	105.033618%
Underwriter's Discount	-34,000.00	-1.000000%
Purchase Price	3,537,143.00	104.033618%
Accrued Interest		
Net Proceeds	3,537,143.00	

BOND SUMMARY STATISTICS

City of Beloit, Kansas
 General Obligation Electric Utility System Refunding Bonds
 Series 2016-A (Refunding Series 2011 Electric Utility System Revenue Bonds)
 -Preliminary, 'A' Rated, BQ-

Dated Date	03/01/2016
Delivery Date	03/01/2016
Last Maturity	12/01/2030
Arbitrage Yield	2.603636%
True Interest Cost (TIC)	2.838505%
Net Interest Cost (NIC)	2.937380%
All-In TIC	3.032183%
Average Coupon	3.426216%
Average Life (years)	8.251
Weighted Average Maturity (years)	8.321
Duration of Issue (years)	7.165
Par Amount	3,400,000.00
Bond Proceeds	3,571,143.00
Total Interest	961,225.00
Net Interest	824,082.00
Bond Years from Dated Date	28,055,000.00
Bond Years from Delivery Date	28,055,000.00
Total Debt Service	4,361,225.00
Maximum Annual Debt Service	295,475.00
Average Annual Debt Service	295,676.27
Underwriter's Fees (per \$1000)	
Average Takedown	
Other Fee	10.000000
Total Underwriter's Discount	10.000000
Bid Price	104.033618

Bond Component	Par Value	Price	Average Coupon	Average Life
Serial Bond	3,400,000.00	105.034	3.426%	8.251
	3,400,000.00			8.251

	TIC	All-In TIC	Arbitrage Yield
Par Value	3,400,000.00	3,400,000.00	3,400,000.00
+ Accrued Interest			
+ Premium (Discount)	171,143.00	171,143.00	171,143.00
- Underwriter's Discount	-34,000.00	-34,000.00	
- Cost of Issuance Expense		-47,930.00	
- Other Amounts			
Target Value	3,537,143.00	3,489,213.00	3,571,143.00
Target Date	03/01/2016	03/01/2016	03/01/2016
Yield	2.838505%	3.032183%	2.603636%

ESCROW REQUIREMENTS

City of Beloit, Kansas
General Obligation Electric Utility System Refunding Bonds
Series 2016-A (Refunding Series 2011 Electric Utility System Revenue Bonds)
-Preliminary, 'A' Rated, BQ-

Period Ending	Principal	Interest	Principal Redeemed	Total
06/01/2016		72,837.50		72,837.50
12/01/2016	170,000.00	72,837.50		242,837.50
06/01/2017		70,925.00		70,925.00
12/01/2017	175,000.00	70,925.00		245,925.00
06/01/2018		68,737.50		68,737.50
12/01/2018	180,000.00	68,737.50	3,060,000.00	3,308,737.50
	525,000.00	425,000.00	3,060,000.00	4,010,000.00

ESCROW DESCRIPTIONS

City of Beloit, Kansas
 General Obligation Electric Utility System Refunding Bonds
 Series 2016-A (Refunding Series 2011 Electric Utility System Revenue Bonds)
 -Preliminary, 'A' Rated, BQ-

Type of Security	Type of SLGS	Maturity Date	First Int Pmt Date	Par Amount	Rate	Max Rate
Mar 1, 2016:						
SLGS	Certificate	06/01/2016	06/01/2016	62,501	0.230%	0.230%
SLGS	Certificate	12/01/2016	12/01/2016	221,298	0.630%	0.630%
SLGS	Note	06/01/2017	06/01/2016	50,436	0.760%	0.760%
SLGS	Note	12/01/2017	06/01/2016	225,628	0.860%	0.860%
SLGS	Note	06/01/2018	06/01/2016	49,410	1.000%	1.000%
SLGS	Note	12/01/2018	06/01/2016	3,289,657	1.160%	1.160%
				3,898,930		

SLGS Summary

SLGS Rates File	10DEC15
Total Certificates of Indebtedness	283,799.00
Total Notes	3,615,131.00
Total original SLGS	3,898,930.00

ESCROW SUFFICIENCY

City of Beloit, Kansas
General Obligation Electric Utility System Refunding Bonds
Series 2016-A (Refunding Series 2011 Electric Utility System Revenue Bonds)
-Preliminary, 'A' Rated, BQ-

Date	Escrow Requirement	Net Escrow Receipts	Excess Receipts	Excess Balance
03/01/2016		10.75	10.75	10.75
06/01/2016	72,837.50	72,837.67	0.17	10.92
12/01/2016	242,837.50	242,837.33	-0.17	10.75
06/01/2017	70,925.00	70,924.92	-0.08	10.67
12/01/2017	245,925.00	245,925.26	0.26	10.93
06/01/2018	68,737.50	68,737.06	-0.44	10.49
12/01/2018	3,308,737.50	3,308,737.01	-0.49	10.00
	4,010,000.00	4,010,010.00	10.00	

ESCROW STATISTICS

City of Beloit, Kansas
 General Obligation Electric Utility System Refunding Bonds
 Series 2016-A (Refunding Series 2011 Electric Utility System Revenue Bonds)
 -Preliminary, 'A' Rated, BQ-

Total Escrow Cost	Modified Duration (years)	Yield to Receipt Date	Yield to Disbursement Date	Perfect Escrow Cost	Value of Negative Arbitrage	Cost of Dead Time
Global Proceeds Escrow: 3,898,940.75	2.469	1.133622%	1.133619%	3,760,646.19	138,293.82	0.74
3,898,940.75				3,760,646.19	138,293.82	0.74

Delivery date 03/01/2016
 Arbitrage yield 2.603636%



Quote Number: QU0000338193
 Effective: 21 OCT 2015
 Effective To: 20 DEC 2015

Bill-To:
 MITCHELL COUNTY
 P.O. BOX 338
 BELOIT, KS 67420
 United States

Ultimate Destination:
 MITCHELL COUNTY
 1716 N. HERSEY
 BELOIT, KS 67420
 United States

Attention:
Name: [REDACTED]
Email: [REDACTED]
Phone: [REDACTED]

Sales Contact:
Name: Mark St Peter
Email: mstpeter@nex-tech.com
Phone: 7856257070

Contract Number: KANSAS STATE
Freight terms: FOB Destination
Payment terms: Net 30 Due

Sheryl Budke
 Sr. Account Manager
 116 West Main
 Beloit, KS 67420
 sbudke@nex-tech.com
 mobile: 785.634.9958
 v. 785.738.3089
 f. 785.625.4479
 Toll Free: 877.625.7872

Ryan McClung
 head of Radio

NEXTECH
 Your Broadband & Technology
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POWER OF ONE

Item	Quantity	Nomenclature	Description	List price	Your price	Extended Price
I	1	M22URS9PW1AN	APX4500 7/800	\$1,354.00	\$1,015.50	\$1,015.50
Ia	1	G24AX	ENH: 2 YEAR REPAIR SERVICE ADVANTAGE	\$121.00	\$121.00	\$121.00
Ib	1	QA02756AD	ADD: 3600 OR 9600 TRUNKING BAUD SINGLE SYSTEM	\$1,570.00	\$1,177.50	\$1,177.50
Ic	1	W22BA	ADD: PALM MICROPHONE	\$72.00	\$54.00	\$54.00
Id	1	G66AW	ADD: DASH MOUNT O2 WWM	\$125.00	\$93.75	\$93.75
Ie	1	W969BM	ADD: MULTIKEY	\$330.00	\$247.50	\$247.50
If	1	W484AG	ALT: ANT 3DB GAIN 762-870MHZ	\$38.00	\$28.50	\$28.50
Ig	1	GA00804AA	ADD: APX O2 CONTROL HEAD (Grey)	\$492.00	\$369.00	\$369.00
Ih	1	G444AH	ADD: APX CONTROL HEAD SOFTWARE	-	-	-
Ii	1	G142AD	ADD: NO SPEAKER NEEDED	-	-	-

Total Quote in USD \$3,106.75

Programming is included, but installation is not included in this pricing.

THIS QUOTE IS BASED ON THE FOLLOWING:

- 1 This quotation is provided to you for information purposes only and is not intended to be an offer or a binding proposal.
- If you wish to purchase the quoted products, Motorola Solutions, Inc. ("Motorola") will be pleased to provide you with our standard terms and conditions of sale (which will include the capitalized provisions below), or alternatively, receive your purchase order which will be acknowledged.
- Thank you for your consideration of Motorola products.
- 2 Quotes are exclusive of all installation and programming charges (unless expressly stated) and all applicable taxes.
- 3 Purchaser will be responsible for shipping costs, which will be added to the invoice.
- 4 Prices quoted are valid for thirty(30) days from the date of this quote.
- 5 Unless otherwise stated, payment will be due within thirty days after invoice. Invoicing will occur concurrently with shipping.



200 North Pine Street
 Solomon, KS 67480
 (785) 655-9471
 Fax (913) 273-1276
 E-Mail he@hommans.net

PROPOSAL

Customer: Beloit Police Department
 1716 North Hersey
 Beloit, KS 67420

Date: Nov 29, 2015

Proposal Description: This proposal is for the purchase of five new P25 digital 800 mobile radios, with antennas, cables, and installation of each into existing vehicles. \$200 of each radio price is for the antenna, cable and install charges. Included is all registration, programming, and set up of radios on the state system. (Console faceplates or any special items that may be needed for installation are not included in this proposal.)

Parts

Quantity:	Part Number:	Part Description:	Price per Part:	
5	KNG-M800	BK 800 Mhz digital mobile radio (MSRP price) \$3750.00	\$2,800.00	\$14,000.00

Total for Parts:	\$14,000.00
Labor Cost:	\$0.00
Shop Materials Cost:	\$0.00

Total Charge for Parts, Labor and Materials:	\$14,000.00
Sales Tax 8%	\$0.00

Total Amount of Proposal: \$14,000.00

This proposal is valid for a period of thirty (30) days from the date reflected above unless otherwise indicated

Proposal accepted by: _____ **Date:** _____

FIRST NATIONAL BANK *and* TRUST

PHILLIPSBURG LOGAN LONG ISLAND

SMITH COUNTY BANK - SMITH CENTER

SOLOMON VALLEY BANK - BELOIT

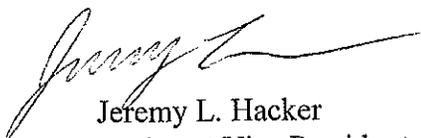
KANSAS

December 9, 2015

City of Beloit:

Thank you for giving us the opportunity to earn your business. We would be able to finance the police radios on a lease to purchase under the following terms: \$17,000.00 3year term at 2.25% interest. Please let us know if you have any questions.

Sincerely,



Jeremy L. Hacker
Assistant Vice President

