

119 North Hersey Avenue
P.O. Box 567
Beloit, Kansas 67420
Phone: 785-738-3551
Fax: 785-738-2517
www.beloitks.org

CITY COUNCIL AGENDA

Tuesday, May 17, 2016
7:00 p.m.

1. CALL TO ORDER
 - A. Roll Call
 - B. Invocation
 - C. Pledge of Allegiance
2. MAYOR AND COUNCIL REPORTS
3. STAFF REPORTS
 - A. City Attorney Report
 - B. City Administrator Report
4. CONSENT AGENDA
 - A. 5/3/2016 City Council Meeting Minutes
 - B. Appropriations 5B
5. ORDINANCES
 - A. Ordinance 2184 Two-Hour Parking
6. RESOLUTIONS
 - A. None
7. FORMAL ACTIONS
 - A. Specifying Statement Regarding Denying Proposed Zoning Regulations
 - B. Nex-Tech Service Agreement
 - C. CDBG Demolition Bids
8. CLOSED SESSION
 - A. Attorney-Client Privileged Information

9. ADJOURNMENT

WORK SESSION AGENDA

1. CORRESPONDENCE AND STAFF REPORTS
 - A. City Attorney Report
 - B. City Administrator Report
2. DISCUSSION ITEMS
 - A. Trekk Design – Water Report
3. ADJOURNMENT

NOTE: Background information is available for review in the office of the City Clerk prior to the meeting.

The Public Comment section is to allow members of the public to address the Council on matters pertaining to any business within the scope of Council authority and not appearing on the Agenda. Kansas Statutes prohibit the Council from taking action on any item not appearing on the Agenda, except where an emergency is determined to exist.

BELOIT CITY COUNCIL MEETING MINUTES
May 3, 2016

The Beloit City Council met in regular session on May 3, 2016 in the Council Chambers. Mayor Tom Naasz called the meeting to order at 7:00 p.m. Council Members in attendance Tony Gengler, Kent Miller, Andrew Grabon, Lee McMillan, Matt Otte, Raymond Pontow, and Lloyd Littrell. Also present were, Interim City Administrator Jay Newton, and City Clerk Amanda Lomax. Absent from the meeting was City Attorney Katie Schroeder.

Department heads in attendance were Ronnie Sporleder, Jim Bentz, Heather Hartman, and Chris Jones.

Mayor Tom Naasz gave the invocation and the Pledge of Allegiance was recited.

Councilor Pontow thanked the Council for voting him in to fill open seat in the 1st Ward. Councilor Pontow said that if anybody has ideas and thoughts for Beloit to give the Governing Body a call. Councilor Otte reminded the public that there is still an open seat for the 4th Ward.

The Consent Agenda consisted of April 19, 2016 Council Meeting Minutes, and appropriations 5A. A motion was made by Councilor Miller and seconded by Councilor Pontow to approve the Consent Agenda in its entirety. Roll call vote yeas: Gengler, Pontow, McMillan, Littrell, Miller, Otte, and Grabon. Nays: None.

Ordinance 2182 Adopting New Zoning Regulations and Zoning District Map for the City of Beloit, and Adopting a Zoning District within the Two-Mile Extra-Territorial Zoning Jurisdiction as written was presented to Council. A motion was made Councilor Grabon and seconded by Councilor Gengler to override the Planning Commission's recommendations, by adopting new zoning regulations and the zoning district map for the city of Beloit, without adopting a zoning district within the two-mile extraterritorial zoning jurisdiction. Roll call votes: Gengler, Pontow, McMillan, Littrell, and Grabon. Nays: Miller, Otte, and Mayor Naasz.

Ordinance 2183 Tampering with Electric Meters was presented to Council. Adopting Ordinance 2183 would make it unlawful for anyone to tamper with an electric meter and provide penalties for tampering with electric meters. A motion was made by Councilor Littrell and seconded by Councilor Grabon to approve Ordinance 2183 Tampering with Electric Meters. Roll call vote yeas: Gengler, Grabon, McMillan, Littrell, Otte, Miller, and Pontow. Nays: None.

Resolution 2016-11 Authorizing the Offering for Sale of General Obligation Bonds, Series 2016-B was presented to Council. A motion was made by Councilor Grabon and seconded by Councilor Pontow to adopt Resolution 2016-11 Authorizing the Offering for Sale of General Obligation Bonds, Series 2016-B. Roll Call votes: Miller, Pontow, Gengler, Grabon, Littrell, McMillan, and Otte. Nays: None.

Staff is recommending that Council approve the Western Area Power Administration (WAPA) agreement. The WAPA agreement will extend the city's agreement to purchase hydro-power to the year 2054. A motion was made by Councilor Gengler and seconded by Councilor Littrell to approve the Western Area Power Administration (WAPA) agreement. Motion carried 7-0. Nays: None.

The Housing Board is recommending that Council approve a Budget Amendment for the CDBG Housing Rehabilitation Project. The budget amendment will allow the city to complete four additional housing demolitions. A motion was made by Councilor Miller and seconded by McMillan to approve the Budget Amendment for the CDBG Housing Rehabilitation Project Motion carried 7-0. Nays: None.

A motion was made by Councilor Grabon and seconded by Councilor McMillan to approve land appraisal of \$7,000.00 for 1.3 acres of property located at the old city dump behind T & R Trucking and to sell to V Ray Thompson. Motion carried 7-0. Nays: None.

Staff is recommending that Council approve the quote from Douglas Pump to rebuild an Intake Pump for the amount of \$12,507.00 plus freight and \$800.00 for a brass strainer. A motion was made by Councilor Littrell and seconded by Councilor McMillan to approve the quote from Douglas Pump to rebuild an Intake Pump for the amount of \$12,507.00 plus freight and \$800.00 for a brass strainer. Motion carried 7-0. Nays: None.

A motion was made by Councilor Pontow and seconded by Councilor McMillan to adjourn the meeting. Motion carried 7-0. The meeting ended at 7:44 p.m.

Work Session started 7:44 p.m. Council Members in attendance were Councilors Littrell, Otte, Miller, McMillan, Pontow, Gengler, and Grabon. Also present were, Interim City Administrator Jay Newton, and City Clerk Amanda Lomax. Absent was City Attorney Katie Schroeder.

Department heads in attendance were Ronnie Sporleder, Jim Bentz, Heather Hartman, and Chris Jones.

Interim City Administrator Jay Newton reported on the following:

1. A water report is expected to be ready from Trekk Design May 17th.
2. Andrew Grabon agreed to become a board member for the 12th Judicial District Advisory Board for Community Corrections.
3. Marla with Austin Peters will be here May 11th to interview the Governing Body for City Administrator Recruitment.
4. Jay asked if the Council would like to have a council retreat with John Devine this year. Consensus was no until a full-time city administrator was hired.

Council was provided with the 2016 1st Quarter Treasurer's Report and Fund Balance Report.

Cheryl Budke with Nex-Tech presented a proposal for hardware and software support for the Administration Department. The proposal will be brought back next meeting for formal approval.

Rachel Malay, Director of the Port Library and Library Board member Keith Bottrell attended the meeting and requested to have three parking stalls reserved for two-hour parking by the library. An ordinance will be presented at a future meeting for approval.

Work Session ended: 8:08 p.m.

TOM NAASZ, Mayor

ATTEST:

AMANDA LOMAX, City Clerk

Accounts Payable Detail Listing

City of Beloit

Vend# Vendor Name

Pay#	Post Date	Due Date	Amount	Invoice	Date	PO#	Date	Status
	Account#	Work Order		Description			Debit	Credit
8 ACE HARDWARE								
66115	5/19/2016	5/19/2016	91.02			24449		Posted
	53-41-6170			490976-ROUND UP			45.99✓	0.00
	53-41-4300			490850-VENT HOOD/ELBOW/PIPE/DUCT			42.45✓	0.00
	53-41-4330			490823-COUPLE INSERT POLY			2.58✓	0.00
							91.02✓	0.00
66116	5/19/2016	5/19/2016	30.19	490681		24428		Posted
	53-43-6000			BLADES & HDW			30.19✓	0.00
66117	5/19/2016	5/19/2016	51.39			24416		Posted
	53-41-4300			490448-NAILS/CORNER BRACES			14.95✓	0.00
	53-41-4300			490229-BRACKET/SQUEEGE/HANDLE/S			36.44✓	0.00
							51.39✓	0.00
66118	5/19/2016	5/19/2016	118.39			23724		Posted
	10-19-7400			490784-VALVE REPAIR			33.98✓	0.00
	10-21-4300			490559-POOL SUPPLIES			23.46✓	0.00
	10-21-4300			490586-BATTERIES			41.97✓	0.00
	10-18-6000			490470-FILTER			18.98✓	0.00
							118.39✓	0.00
66119	5/19/2016	5/19/2016	74.96			25127		Posted
	10-11-4300			490284-VALVE/HANDLE ASSY			48.98✓	0.00
	10-11-4300			490298-BRASS SPUDS			25.98✓	0.00
							74.96✓	0.00
66120	5/19/2016	5/19/2016	91.53			24368		Posted
	53-41-4300			489431-PAINT			13.96✓	0.00
	53-41-4300			489607-PAINT & BRUSH			45.48✓	0.00
	53-41-4300			489812-HOSE			11.61✓	0.00
	53-41-4300			489831-OIL DRY TOWELS			12.99✓	0.00
	53-41-4300			489894-GLUE EPOXY			7.49✓	0.00
							91.53✓	0.00
66121	5/19/2016	5/19/2016	67.95			23722		Posted
	10-18-6000			489786-VALVE SLONE			37.98✓	0.00
	10-18-6000			489770-BALL VALVE			29.97✓	0.00
							67.95✓	0.00
66122	5/19/2016	5/19/2016	72.14	490132		24401		Posted
	53-41-6000			SQUEEGEE/TRASH BAGS/FILTERS/HDV			72.14✓	0.00
66123	5/19/2016	5/19/2016	15.97	490220		24402		Posted
	53-43-7450			NUT DRIVER/DRILL BITS			15.97✓	0.00
66124	5/19/2016	5/19/2016	37.97					Posted
	51-41-6000			490301-TUBING/FUEL FILTERS			10.99✓	0.00
	51-41-6000			490332-TUBING/GORILLA TAPE			12.99✓	0.00
	51-41-6000			490263-SOLDER PLUMBERS KIT			13.99✓	0.00
							37.97✓	0.00
66125	5/19/2016	5/19/2016	115.32			CLARK575		Posted
	10-15-6000			490278-SPADE			32.99✓	0.00
	10-15-6000			490307-KEYS			49.80✓	0.00
	10-15-6000			490458-PAINT			6.98✓	0.00
	10-15-6000			490471-PAINT			6.98✓	0.00
	10-22-6000			490848-WOOD SHIMS/GORILLA GLUE			18.57✓	0.00
							115.32✓	0.00
66126	5/19/2016	5/19/2016	13.99	490457				Posted
	51-43-6000			BRAID NYLON REEL			13.99✓	0.00
66127	5/19/2016	5/19/2016	176.86					Posted
	52-43-6000			489423-FORM-A-GASKET			3.99✓	0.00
	52-43-6000			489424-ELBOWS			6.58✓	0.00
	52-43-6000			489934-BATTERY/GASKET			137.98✓	0.00
	52-43-6000			490472-GASKET			7.99✓	0.00
	52-43-6000			490689-HDW/NUTS/BOLTS			20.32✓	0.00
							176.86✓	0.00
66128	5/19/2016	5/19/2016	44.43	489614				Posted
	51-43-6000			BLADE/TAPE/HOSE			44.43✓	0.00
66173	5/19/2016	5/19/2016	2.40			CLARK577		Posted
	10-15-6000			490899-SPRAY PAINT			6.98✓	0.00
	10-15-6000			490908-CREDIT FROM INV 490848			0.00	4.58✓
							6.98✓	4.58✓

Accounts Payable Detail Listing

City of Beloit

<u>Vend#</u>	<u>Vendor Name</u>	<u>Pay#</u>	<u>Post Date</u>	<u>Due Date</u>	<u>Amount</u>	<u>Invoice</u>	<u>Date</u>	<u>PO#</u>	<u>Date</u>	<u>Status</u>
			<u>Account#</u>	<u>Work Order</u>		<u>Description</u>			<u>Debit</u>	<u>Credit</u>
8	ACE HARDWARE (continued)									
66231		5/19/2016	5/19/2016		63.90			23747		Posted
			10-18-4330			490887-CATCH DRAW KIT			7.49✓	0.00
			10-21-6000			490928-TAPE			23.46✓	0.00
			10-21-6000			491227-HOSE COUPLING, CONNECTOR			28.95✓	0.00
			10-21-6000			491514-HOSE, SPRAY PAINT			4.00✓	0.00
									63.90✓	0.00
11	ADVANCE INSURANCE COMPANY									
66129		5/19/2016	5/19/2016		665.99			25162		Posted
			21-00-2100			MAY 2016 LIFE INS. PREMIUMS			665.99✓	0.00
767	AIRGAS MID SOUTH INC									
66130		5/19/2016	5/19/2016		306.69	9050704093		24451		Posted
			53-41-6230			NITROGEN			306.69✓	0.00
2137	ALERT									
66131		5/19/2016	5/19/2016		200.00	10888		24622		Posted
			10-13-4330			ACI STALKER			200.00✓	0.00
27	ALSOP SAND CO., INC									
66141		5/19/2016	5/19/2016		429.68	464597				Posted
			52-43-6150			52.4 YDS SAND			429.68✓	0.00
1679	ALTEC INDUSTRIES INC									
66188		5/19/2016	5/19/2016		585.34	5287800		24457		Posted
			53-43-4330			TAMP REPAIR			585.34✓	0.00
813	AMERIPRIDE SERVICES INC.									
66132		5/19/2016	5/19/2016		109.83	2300662308		24623		Posted
			10-13-4300			FLOOR MATS			109.83✓	0.00
66174		5/19/2016	5/19/2016		83.50	2300663934		CLARK578		Posted
			25-00-3000			SHOP TOWELS/RUGS			83.50✓	0.00
2032	AT&T									
66133		5/19/2016	5/19/2016		146.45	78573838216789		25300		Posted
			51-43-5310			SEWER			146.45✓	0.00
66134		5/19/2016	5/19/2016		105.00	08900759485827		25146		Posted
			10-13-5310			PD-INTERNET			105.00✓	0.00
2991	AUTO OUTLET DISMANTLER, LLC									
66135		5/19/2016	5/19/2016		110.00	43264		25171		Posted
			10-13-4310			SEAT BELT BUCKLE-2014 CHARGER			110.00✓	0.00
70	BELOIT FLORAL									
66142		5/19/2016	5/19/2016		27.13	4944				Posted
			52-41-7490			FLOWERS			27.13✓	0.00
74	BELOIT MEDICAL CENTER, PA									
66136		5/19/2016	5/19/2016		33.00			24624		Posted
			10-13-3300			MEDICAL BILL FOR BRICE REYNOLDS			33.00✓	0.00
77	BELOIT READY MIX									
66175		5/19/2016	5/19/2016		1,440.75	758530		CLARK579		Posted
			25-00-6150			12.75 CU. YDS. 6-27			1,440.75✓	0.00
80	BELOIT TYPEWRITER EXCHANGE									
66137		5/19/2016	5/19/2016		90.00	522855		25176		Posted
			10-11-6000			COMPUTER REPAIR & PAPER			90.00✓	0.00
66138		5/19/2016	5/19/2016		22.80	522887		24448		Posted
			53-41-5320			UPS			22.80✓	0.00
66139		5/19/2016	5/19/2016		76.96			24424		Posted
			53-43-6110			522847-PRINTER CARTRIDGE			34.99✓	0.00
			53-43-6110			522861-PAPER & PENCILS			41.97✓	0.00
									76.96✓	0.00
66140		5/19/2016	5/19/2016		66.69	522883		24440		Posted
			53-43-6110			FOLDERS/PRINTER CARTRIDGE			66.69✓	0.00
66143		5/19/2016	5/19/2016		69.79			25126		Posted
			10-11-6110			522801-PAPER			17.99✓	0.00
			10-11-6110			522848-NAME PLATES			51.80✓	0.00
									69.79✓	0.00
66144		5/19/2016	5/19/2016		95.77	522787		25043		Posted
			10-11-6110			PRINTER CARTRIDGES			95.77✓	0.00

Accounts Payable Detail Listing

City of Beloit

<u>Vend#</u>		<u>Vendor Name</u>		<u>Pay#</u>	<u>Post Date</u>	<u>Due Date</u>	<u>Amount</u>	<u>Invoice</u>	<u>Date</u>	<u>PO#</u>	<u>Date</u>	<u>Status</u>
	<u>Account#</u>	<u>Work Order</u>	<u>Description</u>								<u>Debit</u>	<u>Credit</u>
80	BELOIT TYPEWRITER EXCHANGE (continued)											
66145	5/19/2016	5/19/2016	35.99	522797			23716					Posted
	10-20-6110			COLUMNAR SHEETS/ENVELOPES/CARI							15.00✓	0.00
	10-18-6110			COLUMNAR SHEETS/ENVELOPES/CARI							20.99✓	0.00
											35.99✓	0.00
66146	5/19/2016	5/19/2016	205.50	522802							205.50✓	0.00
	51-41-6110			OFFICE SUPPLIES/UPS								0.00
66147	5/19/2016	5/19/2016	23.36	522842							23.36✓	0.00
	51-43-6110			UPS								0.00
66148	5/19/2016	5/19/2016	32.10	522760							32.10✓	0.00
	52-41-6110			PRINTER CARTRIDGE								0.00
669	BLADE-EMPIRE PUBLISHING											
66149	5/19/2016	5/19/2016	288.10				25175					Posted
	52-43-5400			063563-WATER FLUSHING							40.20✓	0.00
	52-43-5400			063601-WATER FLUSHING							40.20✓	0.00
	52-43-5400			153451-WATER SYSTEMS OP AD							46.90✓	0.00
	52-43-5400			153851-WATER FLUSHING							40.20✓	0.00
	52-43-5400			153915-WATER FLUSHING							40.20✓	0.00
	52-43-5400			154114-WATER FLUSHING							40.20✓	0.00
	52-43-5400			154212-WATER FLUSHING							40.20✓	0.00
											288.10✓	0.00
66150	5/19/2016	5/19/2016	140.70				25174					Posted
	10-18-5400			153487-SUMMER HELP							46.90✓	0.00
	10-18-5400			153576-SUMMER HELP							46.90✓	0.00
	10-18-5400			153627-SUMMER HELP							46.90✓	0.00
											140.70✓	0.00
66151	5/19/2016	5/19/2016	462.05				25124					Posted
	10-11-5400			153622-ORDINANCE #2180							67.50✓	0.00
	10-11-5400			153917-CASE C-236							60.00✓	0.00
	10-11-5400			153918-CASE C-237							60.00✓	0.00
	10-11-5400			063562-ORDINANCE #2181							56.25✓	0.00
	10-11-5400			153485-COUNCIL AGENDA							107.20✓	0.00
	10-11-5400			153606-LAKE GUIDE							60.00✓	0.00
	10-11-5400			153850-COUNCIL AGENDA							93.80✓	0.00
	10-11-5400			154210-ATT WATER USERS							60.30✓	0.00
	10-11-5400			154254-DISCOUNT							0.00	103.00✓
											565.05✓	103.00✓
88	BLUE CROSS & BLUE SHIELD INSURANCE											
66152	5/19/2016	5/19/2016	47,552.65				25163					Posted
	21-00-2100			MAY 2016 HEALTH INS. PREMIUMS							47,552.65✓	0.00
2800	BLUE VALLEY COMMUNICATIONS/NETWORKS PLUS											
66153	5/19/2016	5/19/2016	60.00	10496420			25170					Posted
	10-11-3360			MOZY PRO BACKUP							60.00✓	0.00
91	BOETTCHER SUPPLY INC											
66154	5/19/2016	5/19/2016	96.18				24417					Posted
	53-41-4300			967793-1-BREAKER, WIRE							81.32✓	0.00
	53-41-4300			968298-1-BAND SAW/BLADE							12.96✓	0.00
	53-41-4300			968529-1-TERMINAL							1.90✓	0.00
											96.18✓	0.00
66155	5/19/2016	5/19/2016	1,581.94				24429					Posted
	53-43-6000			961311-1-CONDUIT, ELBOW							862.41✓	0.00
	53-43-6000			962170-1-CONDUIT, ADAPTER							164.36✓	0.00
	53-43-6000			963608-1-CONDUIT, ELBOW, COUPLING							66.27✓	0.00
	53-43-6000			967632-1-VINYL ELECTRICAL TAPE							243.00✓	0.00
	53-43-6000			968642-1-BOX COVER							0.82✓	0.00
	53-43-6000			969128-1-FUSE HOLDER, FUSE							245.08✓	0.00
											1,581.94✓	0.00
66156	5/19/2016	5/19/2016	118.65	965705-1			24369					Posted
	53-43-5400			NEC CODE BOOK & TABS							118.65✓	0.00

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

Accounts Payable Detail Listing

City of Beloit

Vend# Vendor Name											
<u>Pay#</u>	<u>Post Date</u>	<u>Due Date</u>	<u>Amount</u>	<u>Invoice</u>	<u>Date</u>	<u>PO#</u>	<u>Date</u>	<u>Status</u>	<u>Debit</u>	<u>Credit</u>	
	<u>Account#</u>	<u>Work Order</u>		<u>Description</u>							
91 BOETTCHER SUPPLY INC (continued)											
66157	5/19/2016	5/19/2016	607.02			24370		Posted			
	53-41-4360			964054-1-CONDUIT/CONNECTOR/ELBO'			125.52✓		0.00		
	53-41-4360			964156-1-CONDUIT/NIPPLE/COVER/REC			53.88✓		0.00		
	53-41-4360			965143-1-PLIERS			13.15✓		0.00		
	53-41-4360			965295-1-TAPE, CONTAX PASTE			414.47✓		0.00		
							607.02✓		0.00		
66158	5/19/2016	5/19/2016	143.85			23720		Posted			
	10-18-6000			966235-1-JUNCTION BOX, 120V TRANSF			78.93✓		0.00		
	10-18-6000			966409-1-24V DEF CONTACTOR			64.92✓		0.00		
							143.85✓		0.00		
66159	5/19/2016	5/19/2016	46.89	967049-1		24403		Posted			
	53-43-6000			WEDGE ANCHOR, ADAPTER			46.89✓		0.00		
66160	5/19/2016	5/19/2016	242.73					Posted			
	51-41-4360			970589-1-HEATER COIL PACK			48.53✓		0.00		
	51-41-4360			965873-1-EXT. COVER OPERATOR			45.08✓		0.00		
	51-41-4360			970618-1-OVERLOAD RELAY			149.12✓		0.00		
							242.73✓		0.00		
66161	5/19/2016	5/19/2016	386.88					Posted			
	52-43-6000			967180-1-PIPE			27.00✓		0.00		
	52-43-6000			968148-1-CONTACT KIT, COIL PACK, CC			359.88✓		0.00		
							386.88✓		0.00		
66162	5/19/2016	5/19/2016	176.10	964277-1				Posted			
	52-41-7490			LENS, LIGHT MODULE			176.10✓		0.00		
66163	5/19/2016	5/19/2016	68.42	965823-1				Posted			
	51-43-6000			FITTING			68.42✓		0.00		
66164	5/19/2016	5/19/2016	4.06	963982-1				Posted			
	52-41-7450			MINI BAYONET			4.06✓		0.00		
66189	5/19/2016	5/19/2016	469.19			24455		Posted			
	53-43-6000			965265-1-BLADE/CONDUIT/ELBOW/COL			252.59✓		0.00		
	53-43-6000			971981-1-BATTERIES			6.40✓		0.00		
	53-43-6000			972050-1-BATTERIES			1.49✓		0.00		
	53-43-4300			971950-1-VENT PIPE/CAP/COLLAR			208.71✓		0.00		
							469.19✓		0.00		
256 BRENNTAG SOUTHWEST INC											
66165	5/19/2016	5/19/2016	2,514.28	BSW720515				Posted			
	51-41-6170			AMMONIUM SULFATE/CARBON/WC204E			2,514.28✓		0.00		
1258 BUMPER TO BUMPER AUTO PARTS											
66166	5/19/2016	5/19/2016	81.49			24450		Posted			
	53-41-6000			683837-HEX BIT SOCKET			22.24✓		0.00		
	53-41-6000			683480-CARB CLEANER			59.25✓		0.00		
							81.49✓		0.00		
66167	5/19/2016	5/19/2016	3.92	683297		23725		Posted			
	10-18-6000			TEST CLIP			3.92✓		0.00		
66168	5/19/2016	5/19/2016	22.75	683501		CLARK576		Posted			
	25-00-4330			TEMP GAUGE			22.75✓		0.00		
66169	5/19/2016	5/19/2016	195.44	683541				Posted			
	52-41-7420			BATTERIES			195.44✓		0.00		
66170	5/19/2016	5/19/2016	11.38	683085				Posted			
	51-43-4310			FUEL CAP			11.38✓		0.00		
1091 CARD SERVICES											
66171	5/19/2016	5/19/2016	479.38	5240		25185		Posted			
	53-41-5800			MEALS			29.52✓		0.00		
	53-41-5800			MEALS			23.39✓		0.00		
	10-21-2400			LG MANUAL & CPR MASK			283.47✓		0.00		
	10-21-2911			RISE GUARDS			143.00✓		0.00		
							479.38✓		0.00		
66172	5/19/2016	5/19/2016	143.01	8199		25186		Posted			
	51-41-5320			POSTAGE			3.34✓		0.00		
	51-41-5320			POSTAGE			16.65✓		0.00		
	51-41-5320			POSTAGE			19.73✓		0.00		
	51-41-5800			MEALS			78.29✓		0.00		
	51-41-2400			CERT. EXAM FEE			25.00✓		0.00		
							143.01✓		0.00		

Accounts Payable Detail Listing

City of Beloit

Vend# Vendor Name

Pay#	Post Date	Due Date	Amount	Invoice	Date	PO#	Date	Status
	Account#	Work Order		Description			Debit	Credit
1091 CARD SERVICES (continued)								
66176	5/19/2016	5/19/2016	182.42	8330		25187		Posted
	10-11-6110			SOFTWARE UPDATE-WONDERSHARE			49.95✓	0.00
	10-11-5320			POSTAGE SUPPLIES			132.47✓	0.00
							182.42✓	0.00
66177	5/19/2016	5/19/2016	1,641.41	7407		25184		Posted
	53-41-5800			MEALS			24.28✓	0.00
	53-41-5800			MEALS			15.15✓	0.00
	53-41-5800			MEALS			26.70✓	0.00
	53-41-5800			MEALS			35.20✓	0.00
	53-41-5800			MEALS			45.70✓	0.00
	53-41-5800			MEALS			62.23✓	0.00
	53-41-5800			HOTEL			141.20✓	0.00
	53-41-5800			HOTEL			0.00	10.17✓
	53-41-5800			HOTEL			244.84✓	0.00
	53-41-5800			HOTEL			272.83✓	0.00
	53-41-5800			HOTEL			272.83✓	0.00
	53-41-5400			CONSTRUCTION HATS			13.97✓	0.00
	53-43-5400			CONSTRUCTION HATS			13.96✓	0.00
	53-43-2400			KMU REG.			250.00✓	0.00
	53-41-2400			KMU REG.			250.00✓	0.00
	53-43-5400			BRACELETS			42.75✓	0.00
	53-41-5400			BRACELETS			42.75✓	0.00
	10-17-2400			CPR SUPPLIES			0.00	166.55✓
	53-41-5400			BUMP CAP			31.87✓	0.00
	53-43-5400			BUMP CAP			31.87✓	0.00
							1,818.13✓	176.72✓
66307	5/19/2016	5/19/2016	1,050.28	8803		25196		Posted
	10-13-6120			9MM HANDGUN			394.94✓	0.00
	10-13-6120			BULLETS			487.55✓	0.00
	10-13-6000			CZ TRAINER			52.90✓	0.00
	10-13-5800			HOTEL			58.38✓	0.00
	10-13-3360			SIRIUS RENEWAL			56.51✓	0.00
							1,050.28✓	0.00
124 CARRICO IMPLEMENT								
66178	5/19/2016	5/19/2016	12,500.00	19482370		23743		Posted
	10-18-7450			2016 JD MOWER			12,500.00✓	0.00
66179	5/19/2016	5/19/2016	816.57			CLARK581		Posted
	10-15-7450			WA63460-REBUILD DRIVE SHAFT			698.90✓	0.00
	10-15-7450			IA33568-LUBE GREASE			36.27✓	0.00
	10-15-7450			IA33583-HOSES & FITTINGS			106.71✓	0.00
	10-15-7450			IA33715-FITTINGS			9.18✓	0.00
	10-15-7450			IA32594-PARTS			86.47✓	0.00
	10-15-7450			IA32999-RETURN FROM INV. IA32594			0.00	86.47✓
	10-15-4330			IA32765-RETURN FROM INV. IA28388			0.00	34.49✓
							937.53✓	120.96✓
66180	5/19/2016	5/19/2016	410.74			CLARK582		Posted
	25-00-4330			IA32589-HOSE & CONNECTIONS			24.93✓	0.00
	25-00-4330			IA32768-BELT			30.33✓	0.00
	25-00-4330			IA33031-CUTTING BIT			306.90✓	0.00
	25-00-4330			IA33037-3 BOXES DEF			33.29✓	0.00
	25-00-4330			IA33014-AIR FILTER			15.29✓	0.00
							410.74✓	0.00
66181	5/19/2016	5/19/2016	107.36	IA32625				Posted
	51-43-4330			HOSE & FITTING			107.36✓	0.00
66182	5/19/2016	5/19/2016	295.00	IA32507				Posted
	52-43-4420			RENT FOR SKID STEER			295.00✓	0.00
2992 CENTRAL OFFICE SERVICE AND SUPPLY								
66303	5/19/2016	5/19/2016	7.29	212018-0		24454		Posted
	53-43-6110			SHEET PROTECTORS			7.29✓	0.00
142 CHAMBER OF COMMERCE								
66232	5/19/2016	5/19/2016	80.00	1680		25236		Posted
	10-17-6800			CHAMBER CHECKS			80.00✓	0.00

Accounts Payable Detail Listing

City of Beloit

<u>Vend#</u>	<u>Vendor Name</u>	<u>Pay#</u>	<u>Post Date</u>	<u>Due Date</u>	<u>Amount</u>	<u>Invoice</u>	<u>Date</u>	<u>PO#</u>	<u>Date</u>	<u>Status</u>
									<u>Debit</u>	<u>Credit</u>
	<u>Account#</u>			<u>Work Order</u>		<u>Description</u>				
1913	CROP PRODUCTION SERVICES (continued)									
66183	5/19/2016	5/19/2016		292.79	29491600			24418		Posted
	53-41-6170					IMAZURON			292.79✓	0.00
66184	5/19/2016	5/19/2016		83.22	29523570			24441		Posted
	53-41-6170					LANDMASTER			83.22✓	0.00
66282	5/19/2016	5/19/2016		199.64	29568042			23749		Posted
	10-18-6170					LIBERATE			199.64✓	0.00
1358	CUNNINGHAM TELEPHONE & CABLE CO									
66185	5/19/2016	5/19/2016		259.38	12754			25138		Posted
	51-41-5310					WATER PLANT			72.39✓	0.00
	53-41-5310					POWER PLANT			186.99✓	0.00
									259.38✓	0.00
66186	5/19/2016	5/19/2016		79.89	03362			25135		Posted
	10-15-5310					STREET DEPT			79.89✓	0.00
66187	5/19/2016	5/19/2016		116.56	13609			25136		Posted
	53-43-5310					SYSTEMS			38.86✓	0.00
	52-43-5310					SYSTEMS			38.85✓	0.00
	51-43-5310					SYSTEMS			38.85✓	0.00
									116.56✓	0.00
66190	5/19/2016	5/19/2016		88.93	10210			25137		Posted
	26-00-5310					COMM DEV.			88.93✓	0.00
66191	5/19/2016	5/19/2016		169.91	13610			25129		Posted
	10-22-5310					AIRPORT			169.91✓	0.00
66192	5/19/2016	5/19/2016		233.00	13094			25130		Posted
	10-18-5310					PARKS & REC			233.00✓	0.00
66193	5/19/2016	5/19/2016		75.63	12334			25131		Posted
	10-14-5310					FD			75.63✓	0.00
66194	5/19/2016	5/19/2016		85.32	11856			25132		Posted
	10-13-5310					PD			85.32✓	0.00
66195	5/19/2016	5/19/2016		342.12	11854			25133		Posted
	10-11-5310					ADMIN			342.12✓	0.00
2842	DIG IT									
66196	5/19/2016	5/19/2016		420.00	251			24458		Posted
	53-43-3000					HYDROVAC			420.00✓	0.00
66197	5/19/2016	5/19/2016		4,136.70				24430		Posted
	53-43-3000					240-HYDROVAC			560.00✓	0.00
	53-43-3000					244-TRENCHING, BACKHOE, HYDROVAC			3,576.70✓	0.00
									4,136.70✓	0.00
193	DOLLAR GENERAL STORE-MSC-410526									
66199	5/19/2016	5/19/2016		8.90	1000512065			23727		Posted
	10-18-7310					CUPS & TEA-ARBOR DAY			8.90✓	0.00
2053	EMG, INC									
66198	5/19/2016	5/19/2016		1,497.40	4284			24466		Posted
	53-41-3000					ENERGY CONSULTING AGREEMENT			1,497.40✓	0.00
2732	CAMI ENGELBERT									
66233	5/19/2016	5/19/2016		48.00				25234		Posted
	10-21-3000					LG AID INSTRUCTOR			48.00✓	0.00
1399	TERRI ENGELBERT									
66234	5/19/2016	5/19/2016		330.00				25235		Posted
	10-21-3000					LG TRAINER			330.00✓	0.00
222	FARMWAY COOP INC.									
66200	5/19/2016	5/19/2016		18.52	4510			25173		Posted
	10-14-6260					FUEL			18.52✓	0.00
66201	5/19/2016	5/19/2016		14,261.52	118-A02127			22391		Posted
	53-41-6260					TRUCK LOAD UNLEADED FUEL			14,261.52✓	0.00
236	FOUTS INSURANCE AGENCY INC.									
66202	5/19/2016	5/19/2016		495.00	14559			25164		Posted
	10-18-5220					ADD JD 5100 TRACTOR & LOADER			495.00✓	0.00
265	GREAT PLAINS LANDSCAPE									
66203	5/19/2016	5/19/2016		198.50	8361			24414		Posted
	53-41-3000					WED BARRIER & PINS			198.50✓	0.00

Accounts Payable Detail Listing

City of Beloit

<u>Vend# Vendor Name</u>		<u>Pay#</u>	<u>Post Date</u>	<u>Due Date</u>	<u>Amount</u>	<u>Invoice</u>	<u>Date</u>	<u>PO#</u>	<u>Date</u>	<u>Status</u>
	<u>Account#</u>			<u>Work Order</u>		<u>Description</u>			<u>Debit</u>	<u>Credit</u>
2517 HQH2O INC. (continued)										
66204	5/19/2016	5/19/2016		46.00				25166		Posted
	10-13-6000					213098-WATER			17.25✓	0.00
	10-13-6000					213338-WATER			17.25✓	0.00
	10-13-6000					213521-WATER			11.50✓	0.00
									<u>46.00✓</u>	<u>0.00</u>
2652 JACKSON'S GLASS SHOP										
66205	5/19/2016	5/19/2016		284.24	1129592			25181		Posted
	10-11-4300					PARTS & LABOR-MUNI DOORS			284.24✓	0.00
2993 JOHN M. ELLSWORTH CO., INC.										
66304	5/19/2016	5/19/2016		1,352.19	449678-IN			24443		Posted
	53-41-4360					FUEL METERS			1,352.19✓	0.00
251 KANSAS GAS SERVICE										
66206	5/19/2016	5/19/2016		66.75	121850373			25145		Posted
	53-43-6210					SYSTEMS			16.69✓	0.00
	52-43-6210					SYSTEMS			16.69✓	0.00
	51-43-6210					SYSTEMS			16.69✓	0.00
	10-13-6210					SYSTEMS			16.68✓	0.00
									<u>66.75✓</u>	<u>0.00</u>
66207	5/19/2016	5/19/2016		56.22	200774227			25144		Posted
	53-43-6210					502 E 12TH-BLDG B-GENE			56.22✓	0.00
66208	5/19/2016	5/19/2016		61.05	162672864			25142		Posted
	10-14-6210					601 N MILL			61.05✓	0.00
66209	5/19/2016	5/19/2016		33.94	169801291			25143		Posted
	51-41-6210					215B S CHESTNUT			33.94✓	0.00
66210	5/19/2016	5/19/2016		574.06	100270100			25141		Posted
	53-41-6210					POWER PLANT			151.80✓	0.00
	10-22-6210					AIRPORT			33.95✓	0.00
	10-15-6210					STREET DEPT.			67.33✓	0.00
	10-11-6210					ADMIN			73.04✓	0.00
	51-41-6210					WATER PLANT			177.23✓	0.00
	10-18-6210					PARKS & REC			26.54✓	0.00
	51-43-6210					SYSTEMS			14.72✓	0.00
	52-43-6210					SYSTEMS			14.72✓	0.00
	53-43-6210					PARKS & REC			14.73✓	0.00
									<u>574.06✓</u>	<u>0.00</u>
370 KANSAS ONE CALL SYSTEM INC										
66211	5/19/2016	5/19/2016		78.00	6040166			25172		Posted
	53-43-3000					LOCATES			26.00✓	0.00
	51-43-3000					LOCATES			26.00✓	0.00
	52-43-3000					LOCATES			26.00✓	0.00
									<u>78.00✓</u>	<u>0.00</u>
394 KRIERS' AUTO PARTS										
66212	5/19/2016	5/19/2016		196.79				25128		Posted
	10-14-4310					4925-212379-PIPE			16.47✓	0.00
	10-14-4310					4925-212593-TUBING/CLAMP/ELBOW			158.69✓	0.00
	10-14-4310					4925-215244-PLUGS			21.63✓	0.00
									<u>196.79✓</u>	<u>0.00</u>
66213	5/19/2016	5/19/2016		7.25	4925-215183			24426		Posted
	53-43-4310					GASKET/THERMOSTAT			7.25✓	0.00
66214	5/19/2016	5/19/2016		7.79	4925-214699			24415		Posted
	53-41-4360					QUICK COUPLER			7.79✓	0.00
66215	5/19/2016	5/19/2016		423.82	4925-215148					Posted
	51-43-4330					DIAMOND CONCRETE BLADE			423.82✓	0.00
66216	5/19/2016	5/19/2016		154.52	4925-214817					Posted
	51-43-6000					MIS FLOOR MATS			154.52✓	0.00
395 KRIZ-DAVIS CO										
66217	5/19/2016	5/19/2016		812.73	S101297131.002			24437		Posted
	53-43-6000					ELBOW CONNECTORS			812.73✓	0.00

Accounts Payable Detail Listing

City of Beloit

<u>Vend#</u>	<u>Vendor Name</u>	<u>Pay#</u>	<u>Post Date</u>	<u>Due Date</u>	<u>Amount</u>	<u>Invoice</u>	<u>Date</u>	<u>PO#</u>	<u>Date</u>	<u>Status</u>
		<u>Account#</u>				<u>Description</u>			<u>Debit</u>	<u>Credit</u>
1263	PRAIRE FIRE COFFEE ROASTERS (continued)									
66240	5/19/2016 5/19/2016	53-43-3000			47.08	838712		24425		Posted
		52-43-3000				COFFEE			15.70 ✓	0.00
		51-43-3000				COFFEE			15.69 ✓	0.00
						COFFEE			15.69 ✓	0.00
									<u>47.08 ✓</u>	<u>0.00</u>
2425	PROTOCOLL, LLC									
66241	5/19/2016 5/19/2016	10-13-5310			364.00	MAY SERVICE		24625	364.00 ✓	Posted 0.00
41	QLT CONSUMER LEASE SERVICES INC									
66242	5/19/2016 5/19/2016	10-15-6000			8.03	INDOOR GONG		CLARK583	8.03 ✓	Posted 0.00
2979	RAY'S APPLE MARKET									
66243	5/19/2016 5/19/2016	53-43-6000			17.94	2661		24427		Posted
		52-43-6000				WATER			5.98 ✓	0.00
		51-43-6000				WATER			5.98 ✓	0.00
						WATER			5.98 ✓	0.00
									<u>17.94 ✓</u>	<u>0.00</u>
66244	5/19/2016 5/19/2016	53-43-6000			17.94	1110		24444		Posted
		52-43-6000				WATER			5.98 ✓	0.00
		51-43-6000				WATER			5.98 ✓	0.00
						WATER			5.98 ✓	0.00
									<u>17.94 ✓</u>	<u>0.00</u>
66245	5/19/2016 5/19/2016	10-11-6000			41.80	8323		25125	41.80 ✓	Posted 0.00
						WATER/CUPS/PAPER TOWELS				
66246	5/19/2016 5/19/2016	53-41-6000			73.15	7029		24366	73.15 ✓	Posted 0.00
						TEA,PAPER TOWELS,TOILET PAPER				
66247	5/19/2016 5/19/2016	53-43-6000			29.90	5967		24379		Posted
		52-43-6000				WATER			9.97 ✓	0.00
		51-43-6000				WATER			9.97 ✓	0.00
						WATER			9.96 ✓	0.00
									<u>29.90 ✓</u>	<u>0.00</u>
66248	5/19/2016 5/19/2016	53-43-6000			21.84	5646		25189		Posted
		52-43-6000				WATER			7.28 ✓	0.00
		51-43-6000				WATER			7.28 ✓	0.00
						WATER			7.28 ✓	0.00
									<u>21.84 ✓</u>	<u>0.00</u>
66249	5/19/2016 5/19/2016	51-41-6000			119.80	5850			119.80 ✓	Posted 0.00
						OFFICE SUPPLIES				
66250	5/19/2016 5/19/2016	52-41-6110			44.58	4925		4925	44.58 ✓	Posted 0.00
						WATER & PAPER TOWELS				
66251	5/19/2016 5/19/2016	10-15-6000			37.79	0466		CLARK584	37.79 ✓	Posted 0.00
						SUPPLIES				
1494	RICOH USA, INC									
66297	5/19/2016 5/19/2016	10-11-3000			166.31	5041845129		25193	166.31 ✓	Posted 0.00
						COPY MACHINE				
586	S & S DRUG STORE									
66252	5/19/2016 5/19/2016	10-13-6000			1.45	BEL012		25180	1.45 ✓	Posted 0.00
						MEDICINE				
575	SAGE PRODUCTS									
66253	5/19/2016 5/19/2016	53-41-6000			247.42	0061718-IN		24469		Posted
						KRESTO WIPES,WASP SPRAY,MOTORE			247.42 ✓	0.00
66254	5/19/2016 5/19/2016	53-41-6000			240.00	0061473-IN		24421		Posted
						PAPER TOWELS			240.00 ✓	0.00
66255	5/19/2016 5/19/2016	52-43-6000			167.00	0061719-IN				Posted
		52-41-6000				ANT & INSECT KILLER			55.67 ✓	0.00
		51-41-6000				ANT & INSECT KILLER			55.67 ✓	0.00
						ANT & INSECT KILLER			55.66 ✓	0.00
									<u>167.00 ✓</u>	<u>0.00</u>

Accounts Payable Detail Listing

City of Beloit

<u>Vend#</u>		<u>Vendor Name</u>		<u>Pay#</u>	<u>Post Date</u>	<u>Due Date</u>	<u>Amount</u>	<u>Invoice</u>	<u>Date</u>	<u>PO#</u>	<u>Date</u>	<u>Status</u>
	<u>Account#</u>	<u>Work Order</u>						<u>Description</u>			<u>Debit</u>	<u>Credit</u>
94 SCHENDEL PEST CONTROL (continued)												
66256	5/19/2016	5/19/2016	50.00	44206			24460					Posted
	10-13-3000							PEST CONTROL			12.50✓	0.00
	53-43-3000							PEST CONTROL			12.50✓	0.00
	52-43-3000							PEST CONTROL			12.50✓	0.00
	51-43-3000							PEST CONTROL			12.50✓	0.00
											50.00✓	0.00
488 SCHWAB EATON BELOIT												
66257	5/19/2016	5/19/2016	418.00	BELOIT			25169				418.00✓	Posted
	30-00-3000							MAP & SURVEY FOR ELLIOTTS ADDITIC				0.00
66258	5/19/2016	5/19/2016	1,149.00	16.036-1				SURVEY & PERMIT-BOETTCHER SEWEI			1,149.00✓	Posted
	52-43-3000											0.00
66298	5/19/2016	5/19/2016	7,987.00	15.093-3			25194				7,987.00✓	Posted
	30-00-3000							PROFESSIONAL SERV. 10TH ST CONST				0.00
607 SHAMBURG OIL COMPANY												
66260	5/19/2016	5/19/2016	335.90	527927			24423				335.90✓	Posted
	53-43-4310							BATTERIES				0.00
66261	5/19/2016	5/19/2016	160.95				24398					Posted
	53-43-6270							524519-DIESEL			53.21✓	0.00
	53-43-6270							524760-DIESEL			57.00✓	0.00
	53-43-6270							524771-DIESEL			50.74✓	0.00
											160.95✓	0.00
66262	5/19/2016	5/19/2016	221.31				24462					Posted
	53-43-6270							527442-DIESEL			58.14✓	0.00
	53-43-6270							529407-DIESEL			89.87✓	0.00
	53-43-6270							529409-DIESEL			73.30✓	0.00
											221.31✓	0.00
66263	5/19/2016	5/19/2016	(40.95)	503589			25177					Posted
	53-43-6270							EXCISE TAX CREDIT-APRIL			0.00	20.48✓
	51-43-6270							EXCISE TAX CREDIT-APRIL			0.00	20.47✓
											0.00	40.95✓
66264	5/19/2016	5/19/2016	50.00	528115							50.00✓	Posted
	51-43-6270							DIESEL				0.00
66265	5/19/2016	5/19/2016	30.01	525027							30.01✓	Posted
	51-43-6270							DIESEL				0.00
66266	5/19/2016	5/19/2016	29.00	526047							29.00✓	Posted
	51-43-6270							DIESEL				0.00
2080 SMOKY HILL LLC												
66299	5/19/2016	5/19/2016	838,799.02				25190				838,799.02✓	Posted
	30-00-3000							EXTENSION & WIDENING OF AIRPORT I				0.00
2367 SOLOMON CORPORATION												
66267	5/19/2016	5/19/2016	298.38	277238			24447				298.38✓	Posted
	53-41-4360							NITROGEN CABINET REPAIRS				0.00
66268	5/19/2016	5/19/2016	9,005.50				24433					Posted
	53-43-6070							276783-TRANSFORMERS			4,578.70✓	0.00
	53-43-6070							276620-TRANSFORMERS			4,426.80✓	0.00
											9,005.50✓	0.00
626 SOLOMON VALLEY HOME CENTER												
66269	5/19/2016	5/19/2016	30.59				23748					Posted
	10-21-6000							10388226-BRASS BUSHING			5.79✓	0.00
	10-21-6000							10388095-PVC NIPPLE, BALL VALVE			24.80✓	0.00
											30.59✓	0.00
66270	5/19/2016	5/19/2016	4.99	10387585			25188				4.99✓	Posted
	10-22-7200							10AGAW				0.00
66271	5/19/2016	5/19/2016	245.99				23741					Posted
	10-18-7310							10386969-WIRE & TUBES			30.45✓	0.00
	10-18-7310							10387245-STAKES FOR TREES			28.80✓	0.00
	10-18-8400							10383243-REBAR			146.00✓	0.00
	10-20-6000							10382349-CORK			40.74✓	0.00
											245.99✓	0.00

Accounts Payable Detail Listing

City of Beloit

<u>Vend#</u>		<u>Vendor Name</u>		<u>Pay#</u>	<u>Post Date</u>	<u>Due Date</u>	<u>Amount</u>	<u>Invoice</u>	<u>Date</u>	<u>PO#</u>	<u>Date</u>	<u>Status</u>
	<u>Account#</u>	<u>Work Order</u>						<u>Description</u>			<u>Debit</u>	<u>Credit</u>
626		SOLOMON VALLEY HOME CENTER (continued)										
66272	5/19/2016	5/19/2016	53.75				24422					Posted
	53-41-4300							10387100-WIRE NAIL, PLYWOOD			19.77✓	0.00
	53-41-4300							10387135-PLYWOOD			33.98✓	0.00
											53.75✓	0.00
66273	5/19/2016	5/19/2016	129.30	10387387			24434				129.30✓	0.00
	53-43-6000			SLAG								
66274	5/19/2016	5/19/2016	22.08				24378					Posted
	53-41-7450			10385951-UTILITY KNIVES							12.48✓	0.00
	53-41-7450			10385953-PLIERS							9.60✓	0.00
											22.08✓	0.00
66275	5/19/2016	5/19/2016	11.29	10386113			23721				11.29✓	0.00
	10-18-6000			BALL VALVES								
66276	5/19/2016	5/19/2016	30.93	10386413			24408				30.93✓	0.00
	53-41-4300			REBAR, AIR FILTER								
66277	5/19/2016	5/19/2016	34.24				CLARK584					Posted
	10-15-6130			10387584-SMART SIDE & SHIMS							23.89✓	0.00
	10-15-6130			10388514-SMART SIDE							10.35✓	0.00
											34.24✓	0.00
66278	5/19/2016	5/19/2016	6.97	10386941							6.97✓	0.00
	51-41-6000			TRAFFIC SEED								
66279	5/19/2016	5/19/2016	77.57				CLARK585					Posted
	10-22-6000			10387443-48" LITTER GRABBER							19.99✓	0.00
	10-22-6000			10387580-GUTTER APRON							8.19✓	0.00
	10-22-6000			10387598-CREDIT FROM 10387585 & 10							0.00	4.54✓
	10-22-6000			10387993-PRODUCTS FOR BLUE HANG							31.75✓	0.00
	10-22-6000			10387880-BLADE/PARTS FOR BLUE HAI							22.18✓	0.00
											82.11	4.54✓
66280	5/19/2016	5/19/2016	36.27									Posted
	30-00-8100			10386149-SAKRETE CONCRETE MIX							17.70✓	0.00
	30-00-8100			10386153-SAKRETE SAND MIX							18.57✓	0.00
											36.27✓	0.00
66281	5/19/2016	5/19/2016	193.33				CLARK586					Posted
	25-00-7450			10385896-HAMMER DRILL BITS							156.43✓	0.00
	25-00-7450			10385926-6 2X4'S							36.90✓	0.00
											193.33✓	0.00
628		SOLOMON VALLEY VET HOSPITAL PA										
66283	5/19/2016	5/19/2016	54.80	254059			25167					Posted
	10-11-3500			ANIMAL BOARDING							54.80✓	0.00
643		STANION WHSE ELECTRIC COMPANY										
66284	5/19/2016	5/19/2016	622.34				24464					Posted
	53-43-6000			4079661-01-PHOTOCELLS							155.58✓	0.00
	53-43-6000			4079661-02-PHOTOCELLS							466.76✓	0.00
											622.34✓	0.00
66285	5/19/2016	5/19/2016	146.13	4079661-00			24446					Posted
	53-43-6000			METER SOCKET							146.13✓	0.00
66286	5/19/2016	5/19/2016	646.73				24435					Posted
	53-43-6000			4055268-03-FEED THRU							318.67✓	0.00
	53-43-6000			4071129-00-CONNECTOR/CLAMPS							120.92✓	0.00
	53-43-6000			4071129-01-CONNECTORS/CLAMPS							186.83✓	0.00
	53-43-6000			4071129-02-CONNECTORS							20.31✓	0.00
											646.73✓	0.00
2478		SelectAccount										
66259	5/19/2016	5/19/2016	15.00				25182					Posted
	21-00-2100			PARTICIPANT FEE							15.00✓	0.00
673		THOMPSON'S OK TIRE, INC										
66287	5/19/2016	5/19/2016	71.00									Posted
	52-41-4330			1-118989-SPREADER WAGON FLAT REI							65.00✓	0.00
	52-41-4330			1-119478-BEAD LEAK							6.00✓	0.00
											71.00✓	0.00
66288	5/19/2016	5/19/2016	70.00	1-118844			CLARK586					Posted
	10-15-6140			TRUCK FLAT							70.00✓	0.00

Accounts Payable Detail Listing

City of Beloit

Vend# Vendor Name

Pay#	Post Date	Due Date	Amount	Invoice	Date	PO#	Date	Status
Account#	Work Order	Description	Debit	Credit				
201 THYSSENKRUPP ELEVATOR (continued)								
66289	5/19/2016	5/19/2016	324.23	3002545073		25168		Posted
	10-11-3000	SERVICE DATE 5/01/16-7/31/16	324.23 ✓					0.00
1163 TMHC SERVICES INC								
66300	5/19/2016	5/19/2016	3,808.50	216718		25192		Posted
	51-43-3000	PRE-EMPLOYMENT TEST	75.00 ✓					0.00
	10-11-3000	EAP FEE	42.00 ✓					0.00
	10-11-3000	ADMIN FEE	126.50 ✓					0.00
	10-21-3000	PRE-EMPLOYMENT TEST 27 @ 75.00	2,025.00 ✓					0.00
	10-21-3000	PRE-EMPLOYMENT TEST 24 @ 55.00	1,320.00 ✓					0.00
	10-21-3000	PRE-EMPLOYMENT TEST 4 @ 55.00	220.00 ✓					0.00
			3,808.50 ✓					0.00
66301	5/19/2016	5/19/2016	237.00	216717		25191		Posted
	10-11-3000	EAP FEE	72.00 ✓					0.00
	10-11-3000	ADMIN FEE	165.00 ✓					0.00
			237.00 ✓					0.00
410 UTILITIES								
66305	5/19/2016	5/19/2016	595.01	7346		25195		Posted
	10-13-6220	CITY SHARE OF JAIL UTILITIES	595.01 ✓					0.00
2067 VERIZON WIRELESS SERVICES, LLC								
66290	5/19/2016	5/19/2016	53.72	3393228202		24626		Posted
	10-13-5310	PD PHONES	53.72 ✓					0.00
66302	5/19/2016	5/19/2016	45.64	9764799921		25150		Posted
	10-18-5310	PARKS & REC ON-CALL PHONE	45.64 ✓					0.00
1177 WACONDA LAKE ASSOCIATION								
66306	5/19/2016	5/19/2016	50.00			23271		Posted
	10-11-6000	KID FISHING TOURNAMENT DONATION	50.00 ✓					0.00
712 WACONDA TRADER								
66291	5/19/2016	5/19/2016	17.00			25161		Posted
	10-11-6110	J. NEWTON-BUSINESS CARDS	17.00 ✓					0.00
2948 SHEILA WAGNER								
66292	5/19/2016	5/19/2016	238.74			23745		Posted
	10-17-6800	REIMBURSEMENT-CUPCAKE CLASS SL	238.74 ✓					0.00
722 WATTS AND SON								
66293	5/19/2016	5/19/2016	5.95	25160		25160		Posted
	10-11-4300	TOILET REPAIR KIT	5.95 ✓					0.00
734 WESCO RECEIVABLES CORP								
66294	5/19/2016	5/19/2016	496.84	078260		24439		Posted
	53-43-6000	WET/DRY WIPES	496.84 ✓					0.00
2627 WICHITA CONCRETE PIPE COMPANY								
66295	5/19/2016	5/19/2016	1,925.00	10052446				Posted
	52-43-4380	MANHOLE SECTIONS	1,925.00 ✓					0.00
753 WORLD PEST CONTROL								
66296	5/19/2016	5/19/2016	65.00	128294		25165		Posted
	10-11-3000	SPRAY MUNI BLDG	65.00 ✓					0.00

1,022,816.79 194 Non-voided payables listed.

Report Setup
 AP - Accounts Payable Listing : Vendor Name
 Filter Options
 Starting: 5/19/2016
 Ending: 5/19/2016
 Banks: All
 Payable Status: Posted, Printed, ACH, Recorded, Voided
 All Vendors Selected

REQUEST FOR COUNCIL ACTION

DATE:

May 17, 2016

TITLE:

ORDINANCE 2184 Two-Hour Parking Stalls

ORIGINATING DEPARTMENT:

Administration

TYPE OF ACTION:

ORDINANCE

RESOLUTION

FORMAL ACTION

OTHER

RECOMMENDATION:

I recommend that the Council approve Ordinance 2184 to designate three two-hour parking spaces in front of the Port Library.

FISCAL NOTE:

- There is no direct cost associated with passing this ordinance.

DISCUSSION:

Respectfully submitted,

Jay Newton,
Interim City Administrator

ORDINANCE NO. 2184

AN ORDINANCE SUPPLEMENTING CHAPTER 16, TRAFFIC, ARTICLE 2, LOCAL REGULATIONS, SECTION 16-215, PARKING ZONE, OF THE BELOIT CITY CODE.

BE IT ORDAINED BY THE GOVERNING BODY OF THE CITY OF BELOIT, KANSAS:

Section 1: Section 16-215 is hereby supplemented to add subsection (c) as follows:

16-215. Parking Zone.

(c) A two-hour parking zone shall be designated at the three west parking spaces in front of the Port Library, 1718 N. Hersey, Beloit, Kansas, from 8:00 a.m. to 5:00 p.m., Monday through Friday, and shall be enforced as designated.

Section 2: This Ordinance shall take effect and be in full force from and after its passage and one publication in the official city newspaper.

PASSED and ADOPTED by the Governing Body and signed by the Mayor this 17th day of May, 2016.

Tom Naasz, Mayor

ATTEST:

Amanda J. Lomax, City Clerk

REQUEST FOR COUNCIL ACTION

DATE:	TITLE:		
May 17, 2016	Statement Specifying for Denying New Zoning Regulations		
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:

The City Attorney presented the City Council three statutory options at the meeting of May 3, 2016 for addressing the Planning Commission recommendation that the city council adopt an ordinance establishing zoning in a two-mile perimeter around the city. The Council chose the second statutory option of voting to override the planning commission's recommendation by a 2/3 majority vote of the membership of the governing body. The vote of the City Council failed to achieve the 2/3 majority.

The third statutory option recommended by the City Attorney was to return the recommendation to the planning commission for reconsideration, stating the governing body's basis for not approving the planning commission recommendation.

Suggested motion to the Planning Commission. "The recommendation of Planning Commission to require extraterritorial zoning is not supported by the Beloit City Council. The City Council would be supportive of a recommendation for zoning and an updated zoning map for the areas within the corporate boundaries of the City of Beloit."

Respectfully submitted,

Jay Newton,
Interim City Administrator

Jay Newton

From: Katie Schroeder <schroederlaw@nckcn.com>
Sent: Monday, May 09, 2016 10:13 PM
To: jnewton@beloitks.org; Chris Jones; theporterinbeloit@yahoo.com
Subject: Planning Commission / Zoning Regulations
Attachments: KSA 12-756.pdf

Jay, Chris, and Cheryl,

After thinking this through and looking over KSA 12-756 again (attached), I believe the council needs to take action on "option 3" which is to make a motion to return the zoning regulations to the PC with a statement specifying the basis for the council's failure to approve/disapprove.

It is my understanding that there was a motion made for "option 2" which failed, but then no further action was taken. The statute says the council may choose (1), (2), *or* (3). Therefore, after the failure of the motion to override the PC's recommendations, there should have been discussion surrounding the basis for the council's decision and then a motion to return the zoning regulations to the PC with that statement specifying the basis for their decision.

→ I think this item needs to be on the council's agenda for the 17th...not the zoning ordinance, but just a formal action item regarding the statement specifying the council's basis for denying the proposed zoning regulations.

With the council leaving the issue hanging, in my opinion that triggers the PC having to have another public hearing and starting the process over. The council cannot adopt zoning regulations without following 12-756...therefore I don't think the council can adopt the regulations for inside the city limits on their own accord...at least not until 12-756 has been fully complied with (i.e. after it is returned to the PC).

I will be at the council meeting on the 17th and can discuss this with the council. I also have the June PC meeting on my calendar and will plan to be there then to further discuss this. In my opinion, at that June PC meeting, the PC then, pursuant to statute, can make amendments and send the regulations back to the council, or they can do nothing and have the council take action from there.

Therefore, rather than prepare a memo for the PC for tomorrow, I will plan to discuss this with the council on the 17th then will discuss it with the PC in June.

Just a side note – I'm not sure who is/was vice-chair of the PC, but if that person is gone, another needs to be selected at tomorrow's meeting.

Please call me Tuesday morning if you have questions about any of this.

Thank you!

Katie J. Schroeder
Schroeder Law Office, LLC
P.O. Box 591
Beloit, Kansas 67420
Phone: (785) 534-1290
Fax: (785) 534-1291

2015 Kansas Statutes

12-756. **Same; zoning; zones or districts; procedure to establish; notice and hearing.** (a) Before any city or county establishes any zone or district or regulates or restricts the use of buildings or land therein, the governing body shall require the planning commission to recommend the nature and number of zones or districts which it deems necessary and the boundaries of the same and appropriate regulations or restrictions to be enforced therein. Except as provided in the zoning regulations, all such regulations shall be uniform for each class or kind of building or land uses throughout each district, but the regulations in one district may differ from those in other districts and special uses may be designated within each district with conditions attached.

(b) Upon the development of proposed zoning regulations, the planning commission shall hold a public hearing thereon. Notice of such public hearing shall be published at least once in the official city newspaper in the case of a city or in the official county newspaper in the case of a county at least 20 days prior to the date of the hearing. In the case of a joint zoning board, notice of such hearing shall be published in the official city and official county newspapers. Such notice shall fix the time and place for such hearing and shall describe such proposal in general terms. The hearing may be adjourned from time to time and at the conclusion of the same, the planning commission shall prepare its recommendations and by an affirmative vote of a majority of the entire membership of the commission adopt the same in the form of proposed zoning regulations and shall submit the same, together with the written summary of the hearing thereon, to the governing body. The governing body either may: (1) Approve such recommendations by the adoption of the same by ordinance in a city or resolution in a county; (2) override the planning commission's recommendations by a 2/3 majority vote of the membership of the governing body; or (3) may return the same to the planning commission for further consideration, together with a statement specifying the basis for the governing body's failure to approve or disapprove. If the governing body returns the planning commission's recommendations, the planning commission, after considering the same, may resubmit its original recommendations giving the reasons therefor or submit new and amended recommendations. Upon the receipt of such recommendations, the governing body, by a simple majority thereof, may adopt or may revise or amend and adopt such recommendations by the respective ordinance or resolution, or the governing body need take no further action thereon. If the planning commission fails to deliver its recommendations to the governing body following the planning commission's next regular meeting after receipt of the governing body's report, the governing body shall consider such course of inaction on the part of the planning commission as a resubmission of the original recommendations and proceed accordingly. The proposed zoning regulations and any amendments thereto shall become effective upon publication of the respective adopting ordinance or resolution.

(c) The provisions of this section shall become effective on and after January 1, 1992.

History: L. 1991, ch. 56, § 16; July 1.

REQUEST FOR COUNCIL ACTION

DATE:

May 17, 2016

TITLE:

Nex-Tech Service Agreement

ORIGINATING DEPARTMENT:

Administration

TYPE OF ACTION:

ORDINANCE

RESOLUTION

FORMAL ACTION

OTHER

RECOMMENDATION:

I recommend that the Council approve attached service agreement with Nex-Tech for the amount of \$1,287.00/month for 36 months.

FISCAL NOTE:

- The funding will come from 10-11-3360 Technical Services.

DISCUSSION:

Administration would like to enter into a contract with Next-Tech (formerly Computer Solutions, Inc.) for hardware and software support. Cheryl Budke from Next Tech attended the last council meeting to explain how this proposal works. A copy of the services agreement is enclosed.

Respectfully submitted,

Jay Newton,
Interim City Administrator



INVESTMENT PROPOSAL

Technology as a Service

Tuesday, April 12, 2016

City of Beloit
Municipal Building
P.O. Box 567
Beloit, KS 67420
785-738-3551

Solution Scope

Comprehensive technology refresh of workstations, server, firewall, software, backup and maintenance.

Solution Values & Components

- Quantity four (4) HP ProDesk 600 Desktops, Core i5 processor, 8GB RAM, 500GB Hard Drive, Windows 7 Professional 64-bit upgradeable to Win 8.1 or 10P, Microsoft Office Pro 2016. The new workstations would be for Amy, Shelley, Jessica and Chris. No monitors are included on this contract.
- Maintenance, Antivirus and Patching for Jay and Mandy's PC's (2)
- New HP ML350 File Server w/1TB useable storage space
- New Sonicwall TZ300 firewall appliance
- Data backup of server with off-site duplication at Nex-Tech NOC
- Virus protection on all workstations and servers (including Jay & Mandy) (7)
- New UPS battery backups on all workstations (6) and server
- Wireless Access Points w/PoE injectors to replace existing
- On-going Support and Maintenance Included throughout Agreement
- Extended Service/Coverage included for both Hardware and Software. Also Certified Labor and Future Solution Protection.
- Disposal of current technology. Documentation will be provided.

City of Beloit will be responsible for acquiring current maintenance contracts on any existing printers or copiers.

Investment Total

Shipping Included, Tax May Be Applicable, Thirty-Six (36) Month Agreement

New PC's, Server, Firewall, Backup, Wireless and Software.....\$ 1,287.00

Please note that circumstances may occur beyond Nex-Tech's control and management, causing the investments presented to change. However, the investments presented above are valid for thirty (30) days from the above date. Representation is pursuant to a valid and current Nex-Tech Terms and Conditions Agreement being on file. In the unlikely event of lost data, lost productivity or the related, Nex-Tech and Cient will adhere to the current applicable governing laws that may apply at the local, state and federal levels.

In the event of a service issue, contact Nex-Tech Service Center at (800) 588-6649 or (785)-621-2800.

Acceptance Signatures

(Customer Authorized Signature)

(Authorized Printed)

(Nex-Tech Authorized Signature)

Sheryl Budke

(Authorized Printed)

_____ 03/26/2016

REQUEST FOR COUNCIL ACTION

DATE:	TITLE:
May 17, 2016	DEMOLITION BID FOR THE HOUSING/DEMOLITION CDBG GRANT
ORIGINATING DEPARTMENT:	TYPE OF ACTION: <input type="checkbox"/> ORDINANCE <input type="checkbox"/> RESOLUTION
Administration Department	<input checked="" type="checkbox"/> FORMAL ACTION <input type="checkbox"/> OTHER

RECOMMENDATION:

The Housing Board is recommending that the City Council approve the demolition bids from Jensen Ag Services in the amount of \$18,700.00 for all 4 demolition units.

FISCAL NOTE:

- Funding for the demolition bids in the amount of \$18,700.00 will be reimbursed 100% from the CDBG Housing Rehabilitation/Demolition.

DISCUSSION:

Respectfully submitted,

Jay Newton,
Interim City Administrator

City of Beloit Housing Demolition Bid

Date: May 11, 2016

Time: 11:01 a.m

Location: City Council Room, Municipal Building, 119 N. Hersey, Beloit, KS

Contractor	Gengler 121 N. Central	Walter 625 E. Clinton	Walter 629 E. Clinton	Walter 701 E. Clinton	TOTAL BID PRICE
1. Diehl Enterprises Salina	5,100	5,100	5,100	5,100	\$ 22,400
2. NCK Services Beloit	10,500	5,000	5,000	5,000	\$ 21,500
3. Zig's Backhoe Beloit	10,500	7,100	8,500	12,000	\$ 34,000
4. Schlaefli Const. Lausker City	10,000	5,100	5,100	5,100	\$ 21,300
5. Jensen Ag Services Belleville	10,000	4,100	2,900	5,200	\$ 18,700
6. White Rock Excavating Beloit	8,500	5,000	5,500	5,000	\$ 24,000
7. Thunder First. Jewell	5,200	5,100	4,400	4,900	\$ 19,600
8.					
9.					

ITEMS FOR COUNCIL DISCUSSION

DATE:

May 17, 2016

TITLE:

WORK SESSION DISCUSSION

DISCUSSION:

Items for discussion at your May 17, 2016 Work Session will include the following:

1. John Brummer with Trekk Design Group, LLC will attend the Council Meeting and discuss water test findings and options to up-grade water treatment facility.

Respectfully submitted,

Jay Newton,
Interim City Administrator



Draft Report

**City of Beloit, Kansas
Water Treatability Study**

Presented to:

City of Beloit, Kansas

May 13, 2016

1.0 Introduction

The City of Beloit retained TREKK Design Group LLC to conduct a study to address their seasonal taste and odor (T&O) events. Objectionable taste and odor events occur in the spring and fall from varying surface water conditions at Waconda Lake and the Solomon River. Water quality testing has shown that cyanobacteria are present during these times and produce the T&O causing compounds 2-methylisoborneol (MIB) and geosmin. The severity of each T&O event varies, and the duration of each event can last from a few days to weeks. The City has experienced some very high T&O events over the last couple of years, with raw water concentrations estimated over 100 ng/L (parts per trillion). The levels at which customers typically begin to detect these compounds is around 10 ng/L. Therefore the goal is to be under 10 ng/L. The existing water treatment process has had difficulty meeting this aesthetic goal.

To address this issue, the City made it a priority to evaluate options for improvements that would be required at the existing plant to address and control these taste and odor events.

During the course of this study, the plant experienced elevated levels of the EPA regulated disinfection byproducts, trihalomethanes (THMs), exceeding the maximum contaminant levels (MCLs). At that time, the study was expanded to evaluate a new facility to address taste and odors, disinfection by products, and anticipated future regulations.

While looking at meeting future regulations it was determined that additional capacity should be included in the improvements to allow for a new industry in town or being a regional supplier to area water districts.

This study will present options for the City to address seasonal taste and odor events, meet current and future regulations, increase plant capacity and provide a long term plan for supplying quality drinking water.

2.0 Beloit Water Treatment Goals

Section Text

2.1 Plant Capacity

The existing plant capacity is maxed out at 1.5 million gallons per day (MGD). The desired ultimate capacity is 3.0 million gallons per day. This would allow the City to supply surrounding water districts in the years to come, supply for a new industry and peak water demand.

2.2 Water Hardness

Hard water requires more soap and synthetic detergents for home laundry and washing, and contributes to scaling in water heaters and boilers. Hardness is caused by compounds of calcium and magnesium, and by a variety of other metals. Water is an excellent solvent and readily dissolves minerals it comes in contact with. As water moves through soil and rock, it dissolves very small amounts of minerals and holds them in solution. Calcium and magnesium dissolved in water are the two most common minerals that make water "hard."

The hardness of water is referred to by three types of measurements: grains per gallon, milligrams per liter (mg/L), or parts per million (ppm). Typically, the water produced by Fairfax Water is considered "moderately hard" to "hard." The table below is provided as a reference.

Table 2-1: Water Hardness Scale

Grains Per Gallon	Milligrams Per Liter (mg/L) or Parts Per Million (ppm)	Classification
less than 1.0	less than 17.1	Soft
1.0 - 3.5	17.1 - 60	Slightly Hard
3.5 - 7.0	60 - 120	Moderately Hard
7.0 - 10.5	120 - 180	Hard
over 10.5	over 180	Very Hard

Beloit's raw water is in the range of 250 to 350 ppm, both in the River and the Lake. The City's customers are accustomed to water hardness in the 80 to 120 mg/l range. This would continue to be the goal with removal from a raw water hardness of 300 to 400 ppm to around 100 ppm. There are many ways to remove hardness from water. These include

- Chemical Precipitation - Lime And Soda Ash Softening
- Nanofiltration or Reverse Osmosis Membranes

- Ion Exchange

2.2.1 Chemical Precipitation

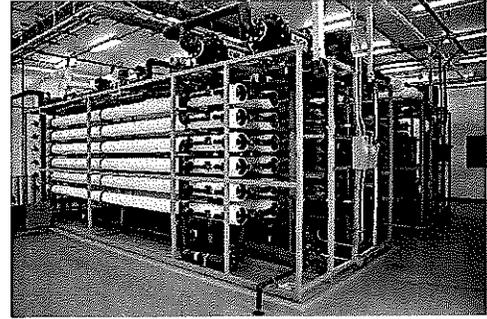
Chemical precipitation is one of the more common methods used to soften water. Chemicals normally used are lime (calcium hydroxide) and soda ash. Lime is used to remove chemicals that cause carbonate hardness. Soda ash is used to remove chemicals that cause non-carbonate hardness. When lime and soda ash are added, hardness-causing minerals form nearly insoluble precipitates. Calcium hardness is precipitated as calcium carbonate (CaCO_3). Magnesium hardness is precipitated as magnesium hydroxide ($\text{Mg}(\text{OH})_2$). These precipitates are then removed by conventional processes of coagulation/flocculation, sedimentation, and filtration. Because precipitates are very slightly soluble, some hardness remains in the water--usually about 80 to 120 mg/l (as CaCO_3). This hardness level is desirable to prevent corrosion problems associated with water being too soft and having little or no hardness.

After adding lime and/or soda ash, treated water will generally have a pH greater than 10. It is necessary to lower the pH to stabilize the water and prevent deposition of carbonate scale on filter sand and distribution piping. Recarbonation is the most common process used to reduce pH. This procedure adds carbon dioxide to water after softening. Generally, enough carbon dioxide is added to reduce the pH of the water to less than 8.7. The amount of carbon dioxide added is determined using a saturation index. When the Langelier Index is positive, pipes tend to become coated with scale. When it is negative, the water tends to be corrosive. When low magnesium water is softened (below 40 mg/l), no excess lime needs to be added. After softening, water becomes supersaturated with calcium carbonate and has a pH between 10.0 and 10.6. When carbon dioxide is added, the excess calcium carbonate is converted back to permanent hardness or calcium bicarbonate. When high magnesium water is softened, excess lime needs to be added to raise the pH above 11, and magnesium hydroxide precipitates out. After treatment, enough carbon dioxide must be added to neutralize the excess hydroxide ions, as well as convert carbonate ions to bicarbonate ions. The first stage of this reaction reduces the pH to between 10.0 and 10.5. In this range, calcium carbonate is formed and magnesium hydroxide that did not precipitate, or did not settle out, is converted to magnesium carbonate. Additional carbon dioxide needs to be added to lower the pH to between 8.4 and 8.6. The previously formed calcium carbonate re-dissolves and carbonate ions are converted to bicarbonate ions. For treatment of low magnesium water (where excess-lime addition is not required) single-stage recarbonation is used. The water is mixed with lime or soda ash in the rapid-mix basin, resulting in a pH of 10.2 to 10.5. If non-carbonate hardness removal is required, soda ash will also be added at this step. After rapid mixing, the resulting slurry is mixed gently for a period of 30 to 50 minutes to allow the solids to flocculate. After flocculation, the water is allowed to flow into a sedimentation basin where the solids will be removed by sedimentation. Following sedimentation the clear water flows to the recarbonation basin where carbon dioxide is added to reduce the pH to between 8.3 and 8.6. Any particles remaining in suspension after recarbonation are removed by filtration.

Lime softening produces large volumes of calcium carbonate and magnesium hydroxide precipitate or "sludge" which may also contain some organic matter flocculated out of the raw water. Processing or disposal of this material is typically in a lagoon. The State of Kansas now prohibits disposal in surface waters.

2.2.2 Membranes

Nanofiltration (NF) and Reverse Osmosis (RO) are pressure driven cross flow separation processes using a semi-permeable membrane. Nanofiltration is often referred to as membrane softening and is one of the major uses of the technology according to the American Membrane Technology Association. Nanofiltration membrane softening has a wide range of performance characteristics between reverse osmosis (RO) and ultrafiltration (UF). It is similar to RO in concentrating and removing dissolved organics and minerals but requires lower pressures. Typical NF systems operate at net driving pressures of 50 to 150 psi compared to 150 to 300 psi for RO, the process from which it evolved.

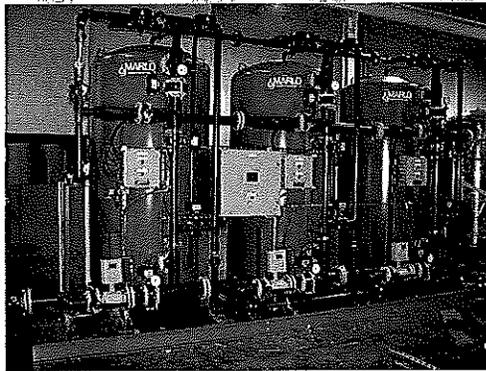


The basic design guidelines, operational parameters, and process considerations for NF and RO are similar and solute rejection is influenced by pH, ionic charge and molecular weight. For water treatment, NF is typically selected over RO when the primary goal is to reduce hardness rather than salinity. RO has shown in many applications and studies to be the most effective technology for removing naturally occurring salts, Bromide and Iodide.

Nanofiltration and Reverse Osmosis is accepted as a "best available technology" for softening and removing precursors that form chlorinated hydrocarbons in potable water production. It also acts as an effective barrier in removing microbial cysts, bacteria, and viruses. NF is successfully employed in removing larger dissolved compounds and ions such as uranium and radium.

2.2.3 Ion Exchange

Ion exchange is also used to remove calcium and magnesium hardness. Calcium and magnesium ions are atoms having a positive electrical charge, as do sodium and potassium ions. Ions of the same charge can be exchanged. In the ion exchange process, a granular substance (usually a resin) that is coated with sodium or potassium ions comes into contact with water containing calcium and magnesium ions. Two positively charged sodium or potassium ions are exchanged (released into the water) for every calcium or magnesium ion that is held by the resin. This "exchange or trade" happens because sodium or potassium are loosely held by the resin. In this way, calcium and magnesium ions responsible for hardness are removed from the water, held by the resin, and replaced by sodium or potassium ions in the water. This process makes water "soft." Eventually, a point is reached when very few sodium or potassium ions remain on the resin, thus no more calcium or magnesium ions can be removed from the incoming water. The resin at this point is said to be "exhausted" or "spent," and must be "recharged" or "regenerated."



One specific manufacturer, MIEX has developed a resin to not only soften water but also reduce natural organic matter and bromide. Initial results from bench testing of raw water indicates that up to 45% removal of natural organic matter is possible – see Table 2-2 below. Bromide removal results were being analyzed as this report was being drafted.

Table 2-2 T

RAW	UVA (cm ⁻¹)			DOC (mg/L)			True Color (PtCo)			Turbidity (NTU)		
	Raw	MIEX [®]	% Removal	Raw	MIEX [®]	% Removal	Raw	MIEX [®]	% Removal	Raw	MIEX [®]	% Removal
Bed Volumes												
1000	0.338	0.138	59%	10.6	6.23	41%	71	29	59%	51.9	37.1	29%
800	0.338	0.133	61%	10.6	6.03	43%	71	27	62%	51.9	36.1	30%
600	0.338	0.123	64%	10.6	5.77	46%	71	25	65%	51.9	34.8	33%
400	0.338	0.109	68%	10.6	5.40	49%	71	21	70%	51.9	32.7	37%
200	0.338	0.092	73%	10.6	4.87	54%	71	17	76%	51.9	28.4	45%

2.3 Taste and Odor Control

Taste and odors resulting from lake turnover and algal blooms can release musty earthy tastes and odors that are traced to two main sources methyl and geosmin. Taste and odor can be controlled in surface waters in one of the following ways:

- Adsorption onto Granular or Powder Activated Carbon
- Oxidation using Ozone
- Biological Filtration
- UV/ Peroxide

2.3.1 Carbon Adsorption

Based on observations at the existing plant during taste and odor events and from recent bench scale tests, it is estimated that a dose of 25 mg/L and contact time of 60 minutes, Watercarb 800 will provide 75% removal of MIB and up to 95 % reduction of geosmin during seasonal episodes.

Granular activated carbon is typically applied on top of gravity filters (caps) or in pressure vessels. It is very costly due to the need to regenerate the media.

2.3.2 Oxidation with Ozone

Ozone is a strong oxidant that is highly effective in removing taste and odors as well as a highly effective disinfectant. However, it can produce an objectionable by product in the presence of bromide that has been found in Beloit's source water. For this reason, extensive testing was conducted on ozone. The results show that in order to use ozone the pH must be in an optimal range and means for reducing bromide is going to be very important in devising a treatment scheme and choosing a raw water source.

In July and August 2015, bench testing was conducted for ozone demand and disinfection byproduct (DBP) formation study on clarified water from the Beloit, KS water treatment plant (WTP). An ozone demand and decay test was conducted and the results were used to calculate the disinfection contact time (CT) value that would be achieved if ozone were added to the current treatment process. In addition, a disinfection byproduct (DBP) formation study was done to determine what impact pre- ozonation would have on the final DBP concentration.

The sample was characterized using the following procedures detailed in the Standard Methods for the Examination of Water and Wastewater (Standard Methods):

- Total Alkalinity
- Dissolved Organic Carbon (DOC)
- Total Organic Carbon (TOC)

Additionally, the pH, total dissolved solids (TDS), and conductivity were measured using a Fisher Scientific Accumet Excel dual channel pH/ion/conductivity meter. Samples were submitted to a certified lab for bromate, bromide, trihalomethane (THM), haloacetic acid (HAA), and odor testing. All test results for pre- and post-treatment testing can be found in Table 1.

To replicate the current chloramination procedures for determination of the DBP formation potential, lab scale chlorine and ammonia dosing was done on the ozonated and filtered samples. The chlorine residual used for testing was 2 mg/L after 30 minutes of contact time. Immediately following filtration, a standardized chlorine stock solution was dosed into the sample and allowed to react in the dark for 30 mins. At the end of the 30 minute reaction time, a sample was taken to measure the free chlorine residual (Table 1). The measured chlorine residual was then used to calculate the appropriate ammonia dose. This dose was based on the current WTP dose ratio of 4 parts chlorine to 1 ammonia. The concentrated stock ammonia solution was dosed and the sample was placed in the dark to react until representative samples were taken for THM, HAA, odor, and bromate analyses.

Background testing was completed to estimate the approximate ozone demand of the sample. The initial ozone demand was about 1.5 mg/l. The testing also revealed that the pH after primary sedimentation was about 10 and bromide concentration in the water was 360 ppb. A bromide concentration of that magnitude causes concern for bromate formation from the ozonation process. In order to limit the bromate formation potential, pH adjustment of the sample was performed critical. The target pH range deemed most plausible for the treatment system redesign was 8.0 – 8.5. Along with the pH adjustment, a conservative ozone dose of <10 mg/L was also critical.

The first test was performed with a 5.10 mg/L ozone dose at a pH of 8.3. After tracking the ozone decay for CT value and half-life calculations, the sample was filtered with a 20 µm filter to mimic the proposed filtration process. The sample was then chlorinated and allowed to react for 30 minutes, half of the current chlorine reaction time of 60 minutes. The chlorine residual at 30 minutes was used to calculate the appropriate ammonia dose after which the sample was again left to react until sampling for DBPs. Due to elevated bromate and THM concentrations, a 5 mg/L ozone dose was deemed too high for this source water.

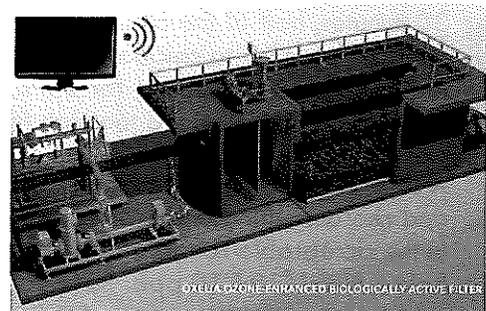
A second test was done at a pH of 8.00 with an ozone dose of 3.03 mg/L. The same filtration and chloramination process was followed for this sample as well. All disinfection by-products were in the acceptable range. However, the bromate concentration was approximately 9 ppb, just below the MCL of 10 ppb. Based on these results it appears the system be designed for a pH adjustment within the range of 7.5 – 7.8 pH units. Modeling programs used by the lab predict the bromate formation to be no higher than 5 ppb with the current water quality at that pH range and a 3.0 mg/L ozone dose. The table below shows the results of the ozone and DBP formation potential testing.

Table 2-3 Initial Ozone Testing Results

Sample ID	Raw Sample	pH Adj & Settled	Ozonated, Filtered, & Chloraminated	Ozonated, Filtered, & Chloraminated
	7/24/15	8/14/15	8/14/15	8/25/15
	10.07			
Adjusted pH		8.35	8.31	8.00
Pre Chlorination pH			7.18	7.50
Total Alkalinity (mg/L)	61.4	30.0	22.6	25.9
Conductivity (mS/cm)	1.167	1.166	1.098	1.147
TDS (ppm)	762.2	776.5	730.5	733.2
DOC (mg/L)	4.98	5.10	4.77	4.97
TOC (mg/L)	5.01	5.11	4.88	4.98
Bromide (µg/L)		360		
Ozone Dose (mg/L)			5.10	3.03
Ozonation CT Value (mg*min/L)			2.74	1.55
Chlorine Dose (mg/L)		4.50	5.00	4.49
Chlorine Residual (mg/L)		2.20	2.30	2.35
Chlorine Demand (mg/L)		2.30	2.70	2.14
Disinfection By-Products				
Bromate (µg/L)			43.08	<10
Bromate MCL (µg/L)			10	
THM (µg/L)			95.5	49.0
THM MCL (µg/L)			80	
HAA (µg/L)			29.3	21.7
HAA MCL (µg/L)			60	
Odor (T.O.N.)			<1.0	1.0

2.3.3 Biological Filtration

Biological filters remove contaminants by three main mechanisms: biodegradation, adsorption of micropollutants, and filtration of suspended solids. The microbial growth attached to the filter media (biofilm) consumes the organic matter that would otherwise flow through the treatment plant and ultimately into the distribution system. The end products are carbon dioxide, water, biomass, and simpler organic molecules. Particle filtration takes place on the bare filter media as well as the biofilm. In biofilters used for biological denitrification, nitrate is converted to nitrogen. In this case, microorganisms are fed a form of carbon, and they use nitrate as an electron acceptor in place of oxygen. Granular activated carbon (GAC) is often used to provide the necessary surface to promote the development of the biofilm.



Ozonation followed by biological filtration is commonly used for effective taste and odor removal. Ozone provides partial removal of geosmin and MIB but also creates other compounds

more amenable to biodegradation. Subsequent biofiltration can remove residual geosmin and MIB in addition to removing these other biodegradable compounds.

2.3.4 UV/Peroxide

Ultraviolet radiation (UV) has long been used for disinfection purposes in the water and wastewater industries. Application of UV light results in photolysis, or the breaking down of compounds through a chemical reaction with photons. This allows for disinfection of water to be achieved as UV light passes through water, irradiating the DNA in microorganisms and rendering them non-infectious, or unable to reproduce. In recent years, UV technology has also been explored as a way to treat recalcitrant compounds such as MIB, geosmin and pharmaceuticals.

UV by itself will not provide significant reduction of these recalcitrant compounds, and practically no removal of T&O causing compounds will be seen. However, when UV radiation is combined with H₂O₂, a photochemical AOP is achieved and hydroxyl radicals are generated. This AOP process allows significant reduction of MIB and geosmin to be achieved. A much larger dose of UV radiation is required for AOP than is required for disinfection. In order to lower electrical and operating costs, UV systems can be configured so that only a small number of lamps are utilized during normal operation for disinfection. During T&O events, the system can be "ramped up" by turning on additional lamps and feeding H₂O₂.

2.4 Natural Organic Matter Removal and Disinfection By Products

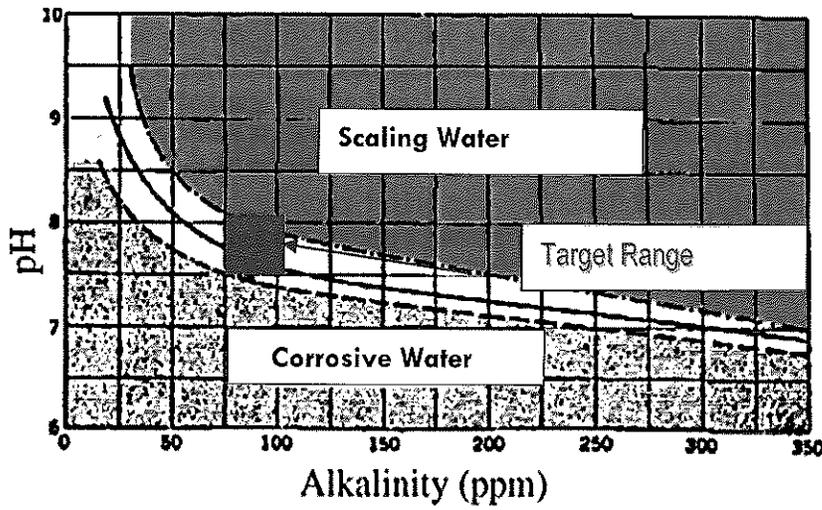
Natural organic matter (NOM) refers to a group of carbon-based compounds that are found in surface water and some groundwater supplies. They are the product of various decomposition and metabolic reactions in the water supply and its surrounding watershed. Common NOM compounds include proteins, polysaccharides, and humic substances. Though NOM does not pose a risk to human health on its own, some NOM compounds are known to react with chlorine and chloramines to produce disinfection by-products (DBPs) such as trihalomethanes (THMs) and haloacetic acids (HAA) that are thought to be carcinogenic. Some NOM occurs as particulate matter or is adsorbed to particulate, but in most water supplies in this area the majority of NOM exists as dissolved compounds and is often measured as dissolved organic carbon (DOC). It is commonly accepted that some NOM compounds are the most likely to react to form DBPs. These structures are known to absorb UV light at specific wavelengths, including 254 nm. Therefore, it is also common to quantify NOM by measuring the amount of UV light it absorbs (UV₂₅₄). UV₂₅₄ can be normalized to DOC to yield a specific UV absorbance (SUVA) value, which can be used to predict the aromaticity and treatability of the NOM being measured. True and apparent colour are also used as rough estimates of NOM content.

Many common and emerging water treatment processes can be used to remove NOM. These include coagulation-based systems such as conventional treatment, dissolved air flotation, direct filtration, and biological filtration. Oxidation-based systems (ozone and biofiltration, ozone and biological filtration, advanced oxidation processes) membrane-based systems (low pressure membranes preceded by coagulation, high pressure membranes working through size exclusion), and adsorption-based systems (activated carbon, ion exchange resins) have also been used to remove or reduce the reactivity of NOM.

2.5 Corrosion and Scaling Water

Kansas Department of Health and Environment's (KDHE) minimum design standards (2008 edition) state that alkalinity after softening should be 50 to 60 mg/L. AWWA and industry standard practices recommend that alkalinity should generally be greater than 80 mg/L as CaCO₃ in the finished water to provide sufficient buffering capacity throughout the distribution system. The target pH and Alkalinity rang will be as shown in Figure 2-1 below.

Figure 2-1 Water Stability Targets



2.6 Long Term Compliance

In order to meet current and forecasted drinking water regulations, the goals listed in Table 2-1 will need to be met.

Table 2-4 Long Term Drinking Water Goals for Regulatory Compliance

Parameter	Goal	Regulatory Limit
Filter Effluent Turbidity (combined filter effluent)	≤ 0.1 NTU for 95% of readings (Not to exceed 0.3 NTU)	≤ 0.3 NTU for 95% of readings (Not to exceed 1 NTU)
Filter Effluent Particle Counts (individual filter)	≤ 10 particles/mL for particles from 2 to 15 μ m in diameter	N/A
TOC removal through process	Equivalent or better than the existing standard for conventional treatment.	25% depending upon TOC monthly average.
Pathogen Inactivation: <i>Giardia</i> <i>Cryptosporidium</i> Viruses	≥ 3 log removal/inactivation ≥ 3 log removal/inactivation ≥ 4 log removal/inactivation	3 log removal/inactivation 2 log removal/inactivation 4 log removal/inactivation
pH	7.8 to 8.5	6.5 to 8.5.
Alkalinity	≥ 60 mg/L as CaCO_3	Lead & Copper Stability
Disinfection By-product Total Trihalomethanes (TTHMs)	≤ 40 μ g/L	80 μ g/L
Haloacetic Acids (HAAs)	≤ 30 μ g/L	60 μ g/L
Bromate	≤ 5 μ g/L	10 μ g/L

3.0 Water Quality Data

There are several raw water quality parameters (turbidity, iron, manganese, total organic carbon, pH, alkalinity, hardness, temperature, etc.) that are analyzed in a surface water source to aid in determining the type of treatment process. The water quality Turbidity indicates the amount of suspended and/or colloidal material that is present in the source water. Without proper removal of these particles and adequate disinfection contact times, microbial contaminants such as *Giardia* and *Cryptosporidium* may pass into the distribution system. Solomon River source water turbidities are anticipated to range from as low as 20 to 50 NTU to as high as 1,000 NTU. These are typical values that can be expected in a river. The combined filtered water turbidity must not exceed 1 NTU at any time or exceed 0.3 NTU in 95% of the monthly samples.

The presence of soluble iron and/or manganese in the source water can result in a discoloration (reddish brown to black tint) of the treated water, if not properly removed in the treatment process. The secondary maximum contaminant levels (MCLs) for iron and manganese are 0.3 mg/L and 0.05 mg/L. Iron and manganese concentrations range from 0.1 mg/L to 1.0 mg/L and 0.02 to 0.08 mg/L, respectively.

Total organic carbon (TOC) is a measure of the organic matter found in the source water. When free chlorine is added to water with organic matter, the free chlorine combines with the organic matter to form disinfection by-products (THMs and HAAs) which are regulated in the Stage 1 and Stage 2 D/DBP Rule. By removing TOC prior to the addition of free chlorine or incorporating a disinfectant that does not combine with the organic matter (chlorine dioxide, ozone, or ultraviolet light), a system can reduce the likelihood of THM and/or HAA formation. It is anticipated that both the Lake and river source water TOC will range from 4.0 to 13.0 mg/L. TOC removal requirements are based on the source water TOC and source water alkalinity. The City consistently meets the 25 to 35% TOC removal requirements.

All drinking water must be treated with disinfectants in order to kill germs. Disinfection byproducts (DBP) form when disinfectants such as chlorine, chlorine dioxide or ozone react with organic and inorganic substances present in the raw water. The primary organic DBP precursors are derived from terrestrial and aquatic plants. Bromide ion is the main inorganic precursor for disinfection byproducts. There are hundreds of different disinfection byproducts that can be formed in drinking water. The type and quantity depend in part on the source water quality, type of disinfectant and distribution system operation. The following disinfection byproducts are regulated with a monitoring requirement and a maximum contaminant level: • total trihalomethanes (TTHM), five haloacetic acids (HAA5), bromate and chlorite.

There are four maximum contaminant levels for disinfection byproducts: Total trihalomethanes may be present at 0.080 milligrams per liter (mg/L); five haloacetic acids at 0.060 mg/L; bromate at 0.010 mg/L; and chlorite at 1.0 mg/L. The frequency of monitoring varies depending on the public water system population size, source type and type of disinfectant used. Past levels of disinfection byproducts have result in quarterly monitoring.

A maximum contaminant level (MCL) violation is issued to any public water system that exceeds the MCL for one or more disinfection byproducts. Failure to reduce these levels may result in an enforcement action by EPA. Although some studies indicate the potential for both short- and long-term adverse health effects, others do not. Some potential health effects include cancer, as well as reproductive and developmental disorders. There is still a lot of uncertainty regarding any one individual's risk when exposed to levels of disinfection byproducts above the maximum contaminant level.

High levels of bromide were found in the lake and river near Beloit. Bromide is a naturally occurring substance typically found in brackish or salty groundwater environments. Although it is not common to have bromide in surface waters, it is in fairly high levels in Beloit's available raw water sources.

The alkalinity and pH of water indicate the tendency of the water is not corrosive. The corrosivity of finished water is regulated based on concentrations of lead and copper at taps within the distribution system. While it is important to know the alkalinity and pH of the source water for various reasons within the treatment process, it is critical that treatment process produce non-corrosive finished water that is distributed within the distribution system.

Taste and odor in the source water spike in the spring and fall in varying degrees of severity due to lake turnover and algal blooms. Some customer complaints have been experienced in the past.

The hardness of water is the sum of the concentrations of multivalent ions, particularly calcium and magnesium. Hardness is generally classified in the following categories: 1) Soft - 0 to 75 mg/L as CaCO₃ 2) Moderate - 75 to 150 mg/L as CaCO₃ 3) Hard - 150 to 300 mg/L as CaCO₃ 4) Very Hard - above 300 mg/L as CaCO₃. Generally, surface water sources have hardness concentrations ranging from 250 to 450 mg/L as CaCO₃.

DRAFT

4.0 Existing Plant Improvement Options

The existing plant is a conventional lime and soda ash softening and filtration plant. The plant was constructed in 1948 and has had improvements to its sludge handling facility and most recently a presedimentation basin and building added in 2005. The original aerator was discontinued at that time.

Some modification were made to the chemical addition during this study that greatly enhanced its performance and the current staff is very knowledgable with how to get the most from the plant, especially as water quality changes occur. However the plant is in need of some major improvements to supply additional peak demand and meet tightening drinking water regulations.

The existing plant is rated for 1.5 mgd and shares the site with the power plant. Rehabilitation of the existing plant would require a great deal of coordination to keep water production going while improvements were made and piping tie-ins made. Available storage is limited 1 to 2 days worth of water demand. Another challenge is that very little space is available to add processes. This section describes the processes necessary to upgrade the plant for additional capacity and to meet current and future regulations. Figure 4-1 shows an aerial view of the existing plant.



Figure 4-1 Existing Plant

4.1 Proposed Improvements at the Existing Facility

The improvements recommended for this option include:

- New high clarification for softening, increased capacity, efficiency, and. It is recommended that ferric chloride coagulants be used for enhanced TOC/DOC removal.
- New lime and soda ash feed equipment due to proximity to the existing silos and feeders.
- Ozone or chlorine dioxide equipment for disinfection credit and control of taste and odors.
- Ozone or chlorine dioxide contact chambers.
- Ultrafiltration membranes.
- Installation of internal baffling in the clearwell to increase the baffling factor to increase disinfection credit.

The new high rate softener, lime and soda ash equipment would need to be constructed east of the existing clarifiers and put on-line before other improvements were made. This will allow for the existing clarifiers to be taken out of service and modified for ozone or chlorine dioxide contact chambers. These contact chambers will be covered with a concrete top and internal baffles installed into the basins. The ozone or chlorine dioxide feed equipment and building could be constructed on top of the newly configured and covered contact basin.

In order to achieve increased filter capacity in a small footprint, and to achieve consistent filtered water quality, ultrafiltration membranes are recommended. These filters could either be submerged into the existing filters and retrofitted one at a time or installed in a new skid and building. If ozone is used, the existing filters could be used for biological filtration to further remove disinfection by product precursors as well as taste and odor. It will also remove biodegradable organic carbon and minimize regrowth in the distribution system. Biological filtration has been very successful when implemented after ozone.

In order to prevent any remaining disinfection by product precursors and organic matter from coming in contact with free chlorine, it is proposed that ammonia and chlorine be added together. This will require an increased amount of detention time to get the same considerable detention time and enhanced Figure 4-2 shows the proposed improvements.

4.3 Opinion of Probable Costs

The cost associated with this option is estimated at \$7 to \$8 million.

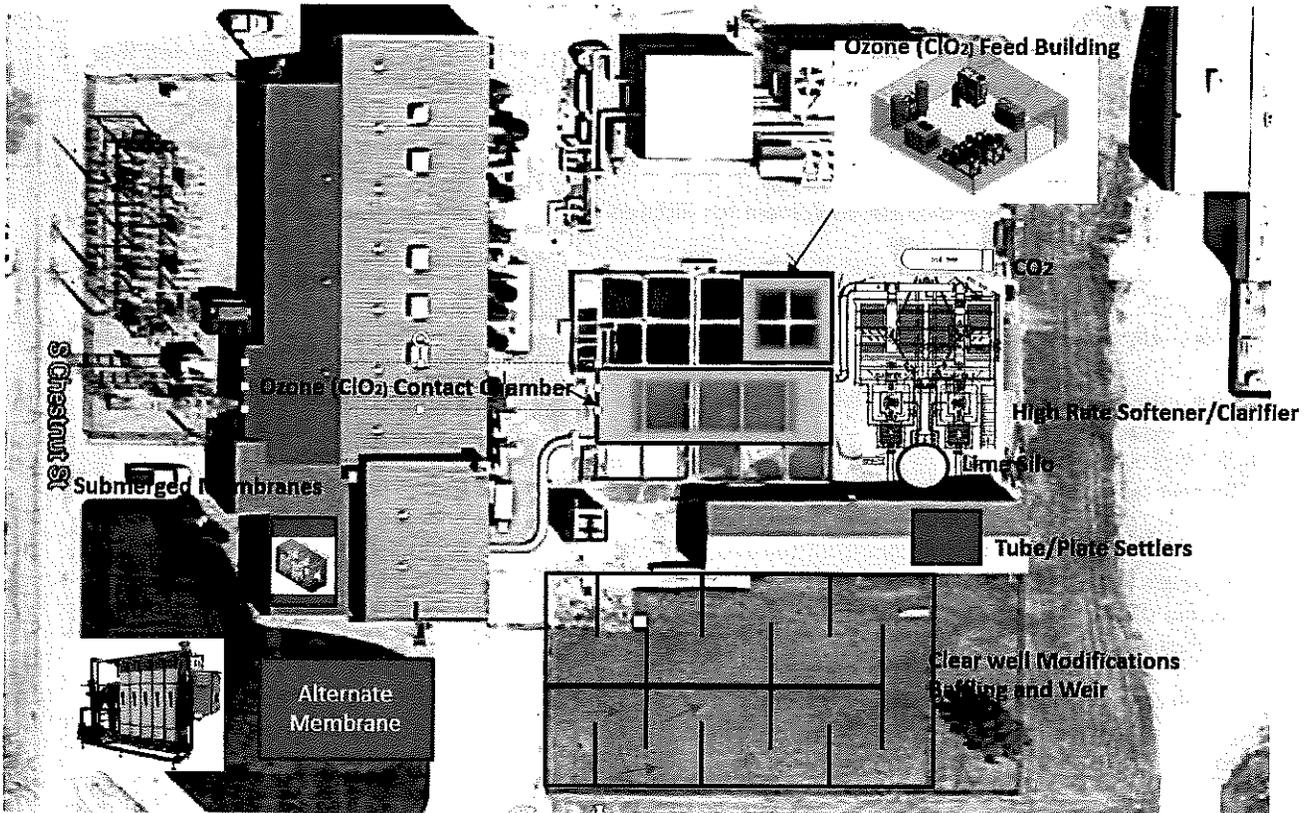


Figure 4-2 Proposed Existing Plant Improvements

5.0 Alternative Water Source Evaluation

The existing plant pulls surface water from the Solomon River. The City currently has xxx acre-feet per year at this location. It also has water rights from the Bureau of Reclamation from the Waconda (Glen Elder) Lake. The Division of Water Resources has indicated that It would be possible to move the point of diversion from the River to the Lake.

The purpose of evaluating an alternative raw water source is to explore the possibility that Glen Elder Lake Water would have higher overall water quality, contain less taste and odor compounds and be more economical to treat.

5.1 Water Quality Testing

Raw water sampling was conducted at various times of the year from both the Solomon River and Glen Elder Lake. It was analyzed for the following parameters:

- Taste and Odor causing compounds geosmin and 2-MIB
- Turbidity
- Hardness and Alkalinity
- Bromide (potential disinfection byproduct)
- UV254
- Dissolved Organic Carbon (DOC) / Total Organic Carbon (TOC)
- pH
- Color
- Iron and Manganese



5.1.1 Raw Water Comparison

When comparing the two source waters, many of the major drinking water parameters except turbidity were similar. The lake is much higher in clarity with consistent low turbidity. Significant rainfall events create a spike in turbidity and suspended solids at the Solomon River and existing plant. This creates the need to adjust chemical dosages to remove the suspended particles and organic matter in the water and adjust for the changes in water hardness associated with these rain events.

One important and significant difference in the two source waters was observed in Total organic carbon (TOC) and dissolved organic carbon (DOC). The lake at times had significantly lower levels of TOC and DOC than the river water (about 3 mg/l). This is important because organic matter can combine with disinfectants in the water to form carcinogenic disinfection by products. The lower the levels of dissolved organic carbon, the less disinfection by product (DBP) precursors that are present.

There was an interesting finding with respect to Bromide. Bromide was present in a few samples but was not present consistently. Bromide levels appear in both locations at nearly the same concentration and ranged from 200 ug/l to 700 ug/l. This is fairly uncommon in surface waters and normally related to brackish salt water environments. However it was consistently found in the lake water and river water. This is an important parameter that affects the options that are evaluated with respect to disinfection by products and removal strategies for natural organic matter and disinfection by product formation potential.

Hardness and alkalinity were slightly lower in the lake and not likely to have a dramatic effect on water treatment options.

5.1.1 Results from the Water Source Evaluation

The results from testing the two source waters indicate that the major difference is in the clarity of the water. Glen Elder Lake water has a consistently clearer water than the river. This would eliminate the extra treatment step of having to deal with high turbidity during rainfall events to remove the suspended solids. It would eliminate the need for a presedimentation basin and allow for advanced treatment techniques to simultaneously soften the water, remove organic matter, control seasonal taste and odors, and disinfect the water without creating carcinogenic disinfection by products.

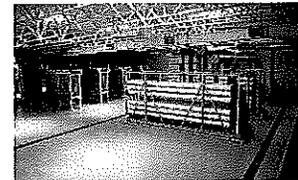
DRAFT

6.0 New Water Treatment Plant Options

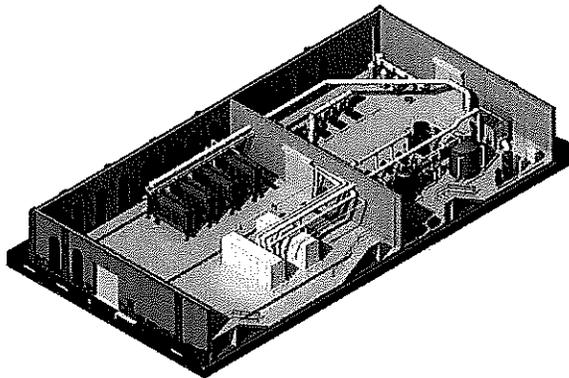
This section is an evaluation of a new water treatment plant option utilizing the latest in advanced treatment and disinfection technologies. The following options are based on the treatment goals discussed in Section 2 and water quality analyses and available water sources. The components are coagulation, softening, clarification, disinfection/oxidation, and filtration.

6.1 Options

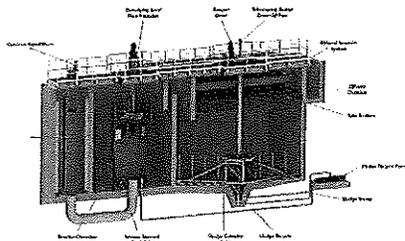
1. Lake Water: Ion Exchange, Ultrafiltration followed by Nanofiltration or Reverse Osmosis and UV/ H₂O₂ Disinfection.



This option would use the lake water and employ anion exchange for natural organic matter, manganese, and bromide and arsenic removal; then use ultrafiltration as a pretreatment step to filter out additional organic matter prior to nanofiltration. Nanofiltration would be used to soften the water and smaller particles. Finally Ultraviolet light and hydrogen peroxide would target taste and odors and provide required disinfection.



2. Lake Water: High Rate Clarification, Microfiltration membranes, Reverse Osmosis, Ozone Disinfection



This option would use the lake water and employ high rate clarification for natural organic matter removal. Microfiltration would be used for pretreatment for RO. RO will remove hardness, bromide removal followed by ozone for taste and odor control and disinfection credit.

3. River Water: Presedimentation, Anion Exchange, High Rate Softening followed by Ultrafiltration, Granular Activated Carbon and Chlorine Dioxide.

This option would utilize presedimentation to remove turbidity, anion exchange for bromide removal, natural organic matter reduction, arsenic removal, manganese removal and to reduce chemical demand. High rate lime softening will be used for hardness removal and TOC reduction, Ultrafiltration for final filtration of particles, granulated carbon and chlorine dioxide for taste and odor removal and disinfection respectively.

For the high rate clarifiers, the following options and approximate costs and features are shown below:

Kruger Actiflo

\$1,100,000

Includes:

- Mechanical Equipment
- Polymer Preparation
- Polymer Metering Pumps
- Coagulant Metering Pumps
- PLC Control Panel
- Process Instrumentation
- Spare Parts

Advantages:

- Works well for removing algae
- Can treat water with fluctuating turbidity, color, and temperature.
- May be able to eliminate the pre-sed basin.
- Can be followed by membrane filters.
- Highest effluent water quality.
- Fast start-up (15 minutes).
- Lowest chemical requirements.
- Ability to add carbon and lime.

Disadvantages:

- Higher capital costs.
- More moving parts than Super-pulsator.

Inilco Superpulsator (High Rate Clarification Only)

\$900,000

- Mechanical Equipment
- Polymer Preparation
- Polymer Metering Pumps
- Coagulant Metering Pumps
- PLC Control Panel
- Process Instrumentation
- Spare Parts
- Additional Concrete Placement

Advantages:

- Fewest moving parts (lowest Hp requirement).
- Works best with lower turbidity (less than 1000 NTU).
- Can add carbon in sludge blanket.

Disadvantages:

- Longer Start-up time to establish sludge blanket
- Not as good with algae
- Pre-sed basin is required.

Suez DensaDeg/ Westtech Contrafast

\$1,400,000

- Mechanical Equipment
- Polymer Preparation
- Polymer Metering Pumps
- Coagulant Metering Pumps
- PLC Control Panel
- Process Instrumentation
- Spare Parts
- Lime Silo and Feeders
- CO₂ Tank and Feeder

Advantages:

- Produces softened water.
- High TOC Removal
- Can handle turbidity spikes
- Great when coupled with ozone for taste

Disadvantages:

- Higher capital costs.
- More moving parts than Super-pulsator.

6.2 New Water Plant Siting Options

If the City decides to utilize the lake water source for the new plant the plant could be placed anywhere between the Lake and the tie in point at the distribution system and would require a minimum of 1 acre with 3 acres being ideal.

If the City decides to use the River Source, an indeal location would be close to the existing plant so that some of the existing plant could still be utilized.

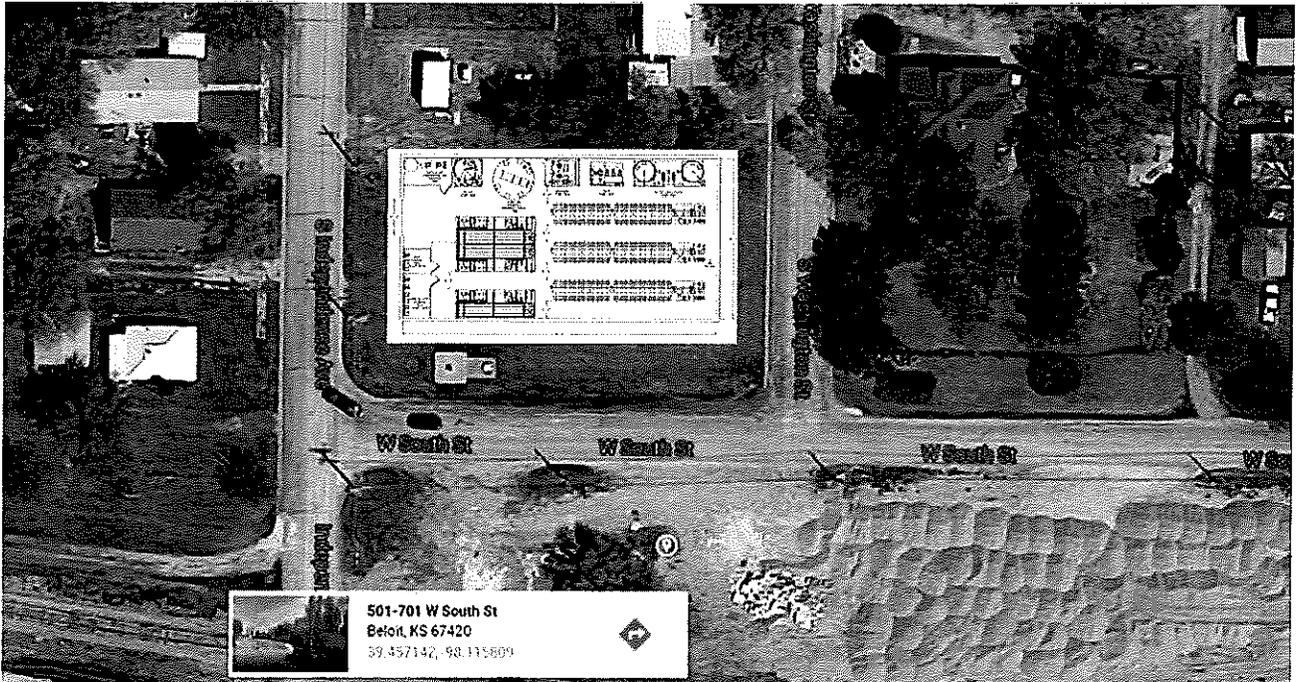


Figure 6-1 Example Plant Layout

7.0 Conclusion and Recommendations

The existing plant is over 60 years old and has functioned well but has nearly exhausted its usefulness in the midst of increasingly stringent water quality regulations and would require major rehabilitation to improve water quality and increase capacity.

The best option for long term compliance and reliably providing the highest quality water possible is to treat the lake water and construct a new water treatment plant. This will require higher up front capital costs due to the need to run a pipeline from the lake to Beloit. This additional cost should be offset in lower long term operational costs will be less due to reduced chemical usage and sludge disposal associated with removing additional organic matter and suspended solids. This option will cost approximately \$11 to \$12 Million for the plant and approximately \$3 million for the raw water line and finished water line to the existing distribution system. With this option, it is possible to put in place 2 mgd of capacity and leave space for easy expansion to 3 mgd by adding membrane skids. This has the potential to bring the initial construction costs down.

The next favorable option is to keep the river water source but build a new plant on 2 to 3 acres near the existing plant. This would allow some savings in reuse of some of the existing facilities including the presedimentation basin. This option would cost \$9 to \$11 million.

The least cost option is also the least favorable option, to rehabilitate the existing water treatment plant. This option will be very difficult to construct, would require interruption of water production and would not be as neat and efficient as a new plant. The the costs would exceed \$7 to \$8 million.

It is recommended that the City initiate pilot testing with the chosen source option to confirm effective removal of bromide, dissolved organics during the most challenging time of year for treating these compounds June, July, and August.

In particular, the membrane system will require piloting for design confirmation, projected production costs and regulatory approval. A detailed plan should be developed to pilot the process train in accordance with KDHE requirements in order to confirm performance, size the equipment and minimize the system's footprint and overall capital cost.

