Waukesha Water Utility
SERVING WAUKESHA SINCE 1886

115 DELAFIELD STREET
WAUKESHA, WI 53188-3615

Telephone: (262) 521-5272 • Fax: (262) 521-5265 • E-mail: contactus@waukesha-water.com

MEMORANDUM

DATE: September 7, 2010

TO: Common Council

FROM: Daniel S. Duchniak, P.E., General Manager DSD

RE: Waukesha Water Supply

I have attached a letter sent by Attorney Donald Gallo to the Department of Natural Resources regarding estimates of the capital costs of water supplies for Waukesha from Milwaukee, Oak Creek and Racine.

It is important to emphasize that these are not the actual costs that the suppliers would charge to Waukesha. ***These are simply estimates of the costs that are involved, not necessarily the costs that Waukesha would pay.*** We will be actively seeking federal grants and other financing options that would help defray the cost. In addition, there are a number of variables that may be considered through a negotiated process. For instance, a supplier may choose to share in the investment in order to gain a valuable long-term water customer like the Waukesha Water Utility. A supplier may also have other customers that would benefit from the infrastructure and may share in the costs.

Waukesha represents a sizable long-term customer for each of these suppliers at a time in which their customer base is shrinking and they are seeking new users to help offset their fixed costs. We expect that a number of factors unique to each supplier will result in healthy competition to meet our water supply needs. It will be impossible to determine what the final cost for Lake Michigan water will be without engaging in negotiations with each of these potential suppliers.

In the coming weeks, it will be our responsibility to assemble a negotiating team to carry out the wishes of the Council. Our intention is to negotiate in good faith to get the best price possible for our customers. After negotiations, final approval of an agreement rests with the Waukesha Common Council. In the meantime, we are openly providing these estimates to the Common Council and to the public for their information.

A summary of our estimates of costs including Operations and Maintenance (O&M) costs follows, along with an estimate of the impacts on the average residential customer of our utility if 100% of the costs were passed through. For instance, if all the estimated costs for a Milwaukee water supply were passed through, without any federal grants, the water portion of an average quarterly residential bill would increase from $66.85 to $142.28. That amount would be an additional $49.55 per quarter if the estimated costs for an Oak Creek supply were passed through, or $16.52 more per month. If the costs were passed through, the estimates for Racine are $69.11 more per quarter or $23.04 more per month, compared to Milwaukee.

Current water portion of average residential bill		$66.85		
	Estimated capital cost	**Average quarterly bill if 100% pass-through without discounts or grants including O&M**	**Increase per quarter compared to Milwaukee estimate Including O&M**	**Increase per month compared to Milwaukee estimate Including O&M**
Milwaukee	$164 million	$142.28		
Oak Creek	$261 million	$191.83	$49.55	$16.52
Racine	$312 million	$211.39	$69.11	$23.04
Deep and Shallow Wells	$189 million	$155.85	$13.57	$4.52
Shallow Wells and Fox River Alluvium	$184 million	$154.73	$12.45	$4.15
Shallow Wells, Fox River Alluvium and Quarries	$286 million	$194.65	$52.37	$17.47

We have also included the costs of groundwater options in the table. However, the city must obtain a water supply that is sustainable and reliable for the long term. The deep and shallow groundwater alternatives that have been studied are not as sustainable or as reliable for the long term as a Lake Michigan water supply and will require that the Utility find another new supply sometime down the road as aquifers decline and water quality deteriorates. Because of the environmental impacts of groundwater use in our region, groundwater alternatives also face significant legal questions and challenges. The city is already facing litigation over preliminary test wells. For all these reasons, our application for Great Lakes water concludes that Lake Michigan is the only reasonable water supply alternative for the Waukesha Water Utility.

The cost impact of any new water supply is significant for utility customers so the numbers must be judged in that context. Doing nothing is not an option for our community. The water utility must obtain a new source of water to ensure a reliable, healthy and environmentally sustainable water supply to our residents and employers. After extensive study, we have concluded that a Lake Michigan water supply is the only reasonable alternative. However, we will do everything we can to help negotiate a water supply agreement to present to the Common Council that is cost-effective for our customers.

If you have any questions about this information, please feel free to contact me.

Reinhart
Attorneys at Law

Reinhart Boerner Van Deuren s.c.
P.O. Box 2265
Waukesha, WI 53187-2265

N16 W23250 Stoneridge Drive
Suite 1
Waukesha, WI 53188

Telephone: 262-951-4500
Facsimile: 262-951-4690
reinhartlaw.com

September 1, 2010

Donald P. Gallo, Esq.
Direct Dial: 262-951-4555
dgallo@reinhartlaw.com

SENT BY FEDERAL EXPRESS

Matthew J. Frank, Secretary
Wisconsin Department of Natural Resources
101 South Webster Street
Madison, WI 53703-3474

Dear Secretary Frank:

Re: City of Waukesha (the "City") Application for Great Lakes Water (the "Application") Cost Information Regarding the Oak Creek and City of Racine Water Supply Alternatives

I represent the City of Waukesha with regard to the Application and write as a follow up to the City's July 27, 2010 letter to you. In addition to transmitting the Application and affirming the City's support for the Application, the City also agreed to provide information to the WDNR relating to the costs of obtaining potable water from the City of Oak Creek and the City of Racine. Such cost information is enclosed.

The costs we are submitting are estimated costs. We cannot overemphasize the term "*estimated.*"

The City is going to undertake serious negotiations with potential suppliers. Issues will become complex, involve a lot of give and take, and therefore, we do not want to etch in stone what the costs will be. The costs are going to be based on what the City can successfully negotiate for the rate payers. To put a figure that is etched in stone in the public domain would clearly disadvantage the City's bargaining position as it is only natural that Oak Creek and Racine will look at the number as being a target or an "at least" amount. Thus, this would clearly disadvantage the City's

bargaining position. These numbers are flexible and the City will do everything in its power to successfully negotiate terms to bring the final cost down.

Please contact Dan Duchniak and Mayor Scrima if you have any questions or need additional information regarding the City's application.

Yours very truly,

Donald P. Gallo

Donald P. Gallo

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Encs.

cc Mayor Jeff Scrima (w/encs.)
Curt R. Meitz, Esq. (w/encs.)
Ms. Lori Luther (w/encs.)
Mr. Daniel Duchniak (w/encs.)
Mr. Daniel Warren (w/encs.)
Mr. Paul R. Ybara (w/encs.)

Oak Creek Water Supply Alternative

Pipelines		**$72,197,000**
10% allowance for pipeline valves & appurtenances		**$7,220,000**
Pipeline Construction Cost		**$79,417,000**
Oak Creek WTP Supply Station		**$8,810,000**
Greenfield Park Booster Station		**$9,160,000**
Return Pipeline/Pump station to Underwood Creek		**$ 29,023,000**
Distribution System Improvements		**$ 8,465,000**
Conveyance System Construction Cost		**$134,875,000**
3% markup for Bonds & Insurance	$4,047,000	
5% markup for Mob/Demob	$6,744,000	
8% markup for Contractors Overhead	$11,654,000	
4% markup for Contractors profit	$5,827,000	
25% Contingency	$40,787,000	
Subtotal Markups and Contingency		**$69,059,000**
Total Project Construction Costs		**$203,934,000**
8% allowance for pipeline engineering and design	16,315,000	
12% allowance for permitting, legal and administration	24,473,000	
8% allowance for pipeline engr services during construction	16,315,000	
Subtotal Other Project Costs		**$57,103,000**
GRAND TOTAL PROJECT COST		**$261,000,000**

Oak Creek Water Supply

Pipeline Segment	Miles	Diameter
A	18	36
B	9	36

Unit cost	$/dia-in	12

Mile	Cost	Comments
1	$3,063,329	5th Ave, utility corridor, cross HWY 32, cross RR
2	$1,687,910	Utility corridor
3	$1,984,435	Utility corridor, along Puetz Rd
4	$1,687,910	Utility corridor
5	$2,714,342	In Rawson, cross Drexel
6	$4,316,717	In Rawson, cross I-94
7	$2,765,664	In Rawson, cross 27th
8	$2,427,895	In Rawson cross 51st, cross Root River
9	$3,515,530	In Rawson cross 76
10	$4,316,717	In Rawson, cross HWY 36
11	$2,497,651	In 92nd
12	$2,386,454	In 92, cross Grange
13	$4,276,800	In 92nd, cross HWY 24, cross Root River
14	$5,522,774	In pkwy, cross Layton and HWY 45
15	$3,402,622	In pkwy, cross HWY 100
16	$3,442,653	In pkwy, cross Morgan
17	$2,267,689	In pkwy, cross Oklahoma
18	$2,280,960	In 124th, cross Lincoln
19	$1,739,232	Cross 124th at Oak leaf trail/utility corridor
20	$1,739,232	Utility corridor, cross Sunnyslope
21	$2,047,162	Utility corridor, cross Moorland
22	$1,867,536	Utility corridor, cross Calhoun
23	$2,194,284	Utility corridor
24	$2,194,284	Utility corridor
25	$1,867,536	Utility corridor, cross Springdale
26	$1,687,910	Utility corridor
27	$2,280,960	In city streets
subtotal	$72,196,189	

Alignment Category	Pipeline Construction Difficulty Factors (source: CPES)	Seg A cost $/lf	Seg B cost $/lf
Open country	0.74	320	320
Low urban	1.00	432	432
Medium urban	1.19	514	514
High urban	1.37	592	592
Groundwater	1.30	562	562
Forest	1.15	497	497
Gravel roads	0.85	367	367
Creek crossing	2.00	864	864
HWY crossing	4.00	1728	1728

miles	0.13	0.25	0.5
feet	660	1320	2640
	4620	3960	2640

Oak Creek Pump Stations

Supply Pump Station at WTP		
250 psi, 18.5 mgd Station	$6,100,000	CPES
Reservoir	$600,000	ENR CCI scaled from JCWA
Sitework, Electrical, SCADA, Yard piping	$1,610,000	
Add'l Standby Generator Capacity	$500,000	price quotes with building allowance
TOTAL	$8,810,000	

Greenfield Park Booster Pump Station		
250 psi, 18.5 mgd Station	$6,100,000	CPES
Head Tank	$200,000	ENR CCI scaled from JCWA
Electric Utility	$1,610,000	CPES
New Standby Generator	$1,000,000	price quote with building allowance
Land	$250,000	
TOTAL	$9,160,000	

Return Flow Underwood Creek (18.5 mgd, 36" dia)		
Pipelines		$23,195,000
10% allowance for pipeline valves & appurtenances		$2,320,000
Pipeline Construction Cost		$25,515,000
WWTP Effluent Pump Station		$3,508,000
Conveyance System Construction Cost		$29,023,000
3% markup for Bonds & Insurance	$871,000	
5% markup for Mob/Demob	$1,452,000	
8% markup for Contractors Overhead	$2,508,000	
4% markup for Contractors profit	$1,254,000	
25% Contingency	$8,777,000	
Subtotal Markups and Contingency		$14,862,000
Total Project Construction Costs		$43,885,000
8% allowance for pipeline engineering and design	3,511,000	
12% allowance for permitting, legal and administration	5,267,000	
8% allowance for pipeline engr services during construction	3,511,000	
Subtotal Other Project Costs		$12,289,000
GRAND TOTAL PROJECT COST		$56,174,000

Alternative 3 - Distribution

Pipelines		**$7,695,000**
10% allowance for pipeline valves & appurtenances		**$770,000**
Pipeline Construction Cost		**$8,465,000**
Pipeline Construction Cost		**$8,465,000**
3% markup for Bonds & Insurance	$254,000	
5% markup for Mob/Demob	$424,000	
8% markup for Contractors Overhead	$732,000	
4% markup for Contractors profit	$366,000	
25% Contingency	$2,561,000	
Subtotal Markups and Contingency		**$4,337,000**
Total Project Construction Costs		**$12,802,000**
8% allowance for pipeline engineering and design	1,025,000	
12% allowance for permitting, legal and administration	1,537,000	
8% allowance for pipeline engr services during construction	1,025,000	
Subtotal Other Project Costs		**$3,587,000**
GRAND TOTAL PROJECT COST		**$16,389,000**

Oak Creek Water Supply

Oak Creek O&M Costs

Source of Supply	Units	Quantity	Unit Cost	Ext. Cost	$/yr	Totals
Purchased water	1000 gals	3,978,500	$ 2.08	$ 8,275,280	$ 8,275,280	
Total Supply						$ 8,275,280

Pumping Supply	Units	Quantity	Unit Cost	Ext. Cost	$/yr	
Energy	mgd	10.9			$ 427,235	
O&M		2% of Capital cost of pump station	$ 0.0200	$ 17,970,000	$ 359,400	
Total Pumping Supply						$ 786,635

Return Flow	Units	Quantity	Unit Cost	Ext. Cost	$/yr	
Energy	mgd	10.9			$ 118,712	
O&M		2% of Capital cost of pump station	$ 0.0200	$ 3,508,000	$ 70,160	
Total Return Flow						$ 188,872

ransmission	Units	Quantity	Unit Cost	Ext. Cost	$/yr	
O&M	$/lf/yr	142,560	$ 0.52	$ 74,131	$ 74,131	
Total Transmission						$ 74,131

Alternative Total O&M ($/yr.)	**$ 9,300,000**
PRESENT WORTH (6%, 20 yrs)	**$ 107,000,000**
PRESENT WORTH (6%, 50 yrs)	**$ 147,000,000**

Racine Water Supply Alternative

Pipelines		$97,116,000
10% allowance for pipeline valves & appurtenances		$9,712,000
Pipeline Construction Cost		$106,828,000
Newman Ave Supply Station		$7,901,000
8 Mile Road Booster Station		$9,160,000
Return Pipeline/Pump station to Underwood Creek		$ 29,023,000
Distribution System Improvements		$ 8,465,000
Conveyance System Construction Cost		$161,377,000
3% markup for Bonds & Insurance	$4,842,000	
5% markup for Mob/Demob	$8,069,000	
8% markup for Contractors Overhead	$13,944,000	
4% markup for Contractors profit	$6,972,000	
25% Contingency	$48,801,000	
Subtotal Markups and Contingency		$82,628,000
Total Project Construction Costs		$244,005,000
8% allowance for pipeline engineering and design	19,521,000	
12% allowance for permitting, legal and administration	29,281,000	
8% allowance for pipeline engr services during construction	19,521,000	
Subtotal Other Project Costs		$68,323,000
GRAND TOTAL PROJECT COST		$312,000,000

Racine Water Supply

Pipeline Segment	Miles	Diameter
A	30	42
B	8	36

Unit cost	$/dia-in	12

Mile	Cost	Comments
1	$2,724,322	In Newman Rd, In HWY C, Cross Emmertsen Rd
2	$2,551,348	In HWY C, Cross sunnyslope, Summercrest, Airline Rd, Cross HWY C, 0.25 mi, Utility corridor
3	$2,825,511	Utility corridor, cross Gitting Rd, wetland, 0.05 forest
4	$2,323,158	Utility corridor, 0.05 forest, cross Northwestern Ave, Dunkelman Rd
5	$2,289,924	Utility corridor, cross small creek, cross 4 Mile Rd
6	$2,118,917	Utility corridor, cross 5 Mile Rd
7	$2,118,917	Utility corridor, cross 6 Mile Rd
8	$1,969,229	Utility corridor
9	$2,983,781	Utility corridor, cross Nicholson Rd, 0.25 mi wetland, cross access road
10	$4,384,195	Utility corridor, cross HWY 38, cross 4-lane road
11	$8,306,854	Utility corridor, cross HWY V and 41 and frontage roads
12	$2,288,505	Utility corridor, cross 43rd and 51st Streets
13	$2,118,917	Utility corridor, cross 60th Street
14	$2,118,917	Utility corridor, cross 76th Street
15	$2,118,917	Utility corridor, cross 92nd Street
16	$2,118,917	Utility corridor, cross 108th Street
17	$3,053,635	Utility corridor, cross HWY 45
18	$2,672,430	Utility corridor, 2 access roads, wetland
19	$1,969,229	Utility corridor
20	$2,288,567	Utility corridor, cross 7 Mile Rd, cross small creek
21	$2,288,567	Utility corridor, cross 8 Mile Rd, cross small creek, cross access road
22	$2,972,538	Utility corridor, cross Loomis Rd, wetland
23	$3,182,700	Utility corridor, cross 2 creeks, cross Muskego Dam Rd, wetland
24	$2,442,908	Utility corridor, cross 3 creeks, 0.05 forest
25	$2,288,567	Utility corridor, cross Parker Dr and Racine Ave, creek crossing
26	$2,604,970	Utility corridor, cross Hennelberry Rd, wetland
27	$2,604,970	Utility corridor, cross access road, Janesville Rd, wetland
28	$2,604,970	Utility corridor, cross Field Rd, wetland
29	$4,164,320	Utility corridor, cross Trans Dr, Quarry Rd, HWY 43, National Avenue, wetland

Alignment Category	Pipeline Construction Difficulty Factors (source: CPES)	Seg A cost $/lf	Seg B cost $/lf
Open country	0.74	373	320
Low urban	1.00	504	432
Medium urban	1.19	600	514
High urban	1.37	690	592
Groundwater	1.30	655	562
Forest	1.15	580	497
Gravel roads	0.85	428	367
Creek crossing	2.00	1008	864
HWY crossing	4.00	2016	1728

miles	0.13	0.25	0.5
feet	660	1320	2640
	4620	3960	2640

30	$2,604,970	Utility corridor, cross Glengarry Rd, wetland
31	$1,762,042	Utility corridor, cross access road, Lawnsdale Rd
32	$1,717,583	Utility corridor, cross Beeheim Rd
33	$1,813,363	Utility corridor, cross 2 access roads , Racine Ave, Hanek Drive, and residential street
34	$2,728,028	Utility corridor, cross Cleveland Ave, cross 2 creeks, wetland
35	$2,098,483	Utility corridor, cross Lincoln Ave, cross creek
36	$2,194,284	Utility corridor, wetland
37	$2,035,757	Utility corridor, cross Springdale, 0.5 mi in Court Street
38	$1,687,910	Utility corridor
subtotal	$97,115,200	

Racine Pump Stations

Supply Pump Station at Newmann Rd

150 psi, 18.5 mgd Station	$5,078,000	CPES
Reservoir	$600,000	ENR CCI scaled from JCWA
Sitework, Electrical, SCADA, Yard piping	$1,073,000	
New Standby Generator	$1,000,000	price quotes with building allowance
Land	$150,000	so existing site available
TOTAL	$7,901,000	

8 Mile Road Booster Pump Station

250 psi, 18.5 mgd Station	$6,100,000	CPES
Head Tank	$200,000	ENR CCI scaled from JCWA
Electric Utility	$1,610,000	CPES
New Standby Generator	$1,000,000	price quote with building allowance
Land	$250,000	
TOTAL	$9,160,000	

Return Flow Underwood Creek (18.5 mad, 36" dia)		
Pipelines		$23,195,000
10% allowance for pipeline valves & appurtenances		$2,320,000
Pipeline Construction Cost		$25,515,000
WWTP Effluent Pump Station		$3,508,000
Conveyance System Construction Cost		$29,023,000
3% markup for Bonds & Insurance	$871,000	
5% markup for Mob/Demob	$1,452,000	
8% markup for Contractors Overhead	$2,508,000	
4% markup for Contractors profit	$1,254,000	
25% Contingency	$8,777,000	
Subtotal Markups and Contingency		$14,862,000
Total Project Construction Costs		$43,885,000
8% allowance for pipeline engineering and design	3,511,000	
12% allowance for permitting, legal and administration	5,267,000	
8% allowance for pipeline engr services during construction	3,511,000	
Subtotal Other Project Costs		$12,289,000
GRAND TOTAL PROJECT COST		$58,174,000

Alternative 3 - Distribution

Pipelines		$7,695,000
10% allowance for pipeline valves & appurtenances		$770,000
Pipeline Construction Cost		$8,465,000
Pipeline Construction Cost		$8,465,000
3% markup for Bonds & Insurance	$254,000	
5% markup for Mob/Demob	$424,000	
8% markup for Contractors Overhead	$732,000	
4% markup for Contractors profit	$366,000	
25% Contingency	$2,561,000	
Subtotal Markups and Contingency		$4,337,000
Total Project Construction Costs		$12,802,000
8% allowance for pipeline engineering and design	1,025,000	
12% allowance for permitting, legal and administration	1,537,000	
8% allowance for pipeline engr services during construction	1,025,000	
Subtotal Other Project Costs		$3,587,000
GRAND TOTAL PROJECT COST		$16,389,000

Racine O&M Costs

Source of Supply	Units	Quantity		Unit Cost	Ext. Cost	$/yr	Totals
Purchased water	1000 gals		3,978,500	$ 2.09	$ 8,315,065	$ 8,315,065	
Total Supply							$ 8,315,065

Pumping Supply	Units	Quantity		Unit Cost	Ext. Cost	$/yr	Totals
Energy	mgd		10.9			$ 348,492	
O&M		2% of Capital cost of pump station		$ 0.0200	$ 17,061,000	$ 341,220	
Total Pumping Supply							$ 689,712

Return Flow	Units	Quantity		Unit Cost	Ext. Cost	$/yr	Totals
Energy	mgd		10.9			$ 118,712	
O&M		2% of Capital cost of pump station		$ 0.0200	$ 3,508,000	$ 70,160	
Total Return Flow							$ 188,872

Transmission	Units	Quantity		Unit Cost	Ext. Cost	$/yr	Totals
O&M	$/lf/yr		200,640	$ 0.52	$ 104,333	$ 104,333	
Total Transmission							$ 104,333

Alternative Total O&M ($/yr.)	**$ 9,300,000**
PRESENT WORTH (8%, 20 yrs)	**$ 107,000,000**
PRESENT WORTH (8%, 50 yrs)	**$ 147,000,000**