



## Department of Public Works

W240N3065 Pewaukee Road  
Pewaukee, WI 53072

DPW Main Office:	(262) 691-0804	Fax: 691-5729
Water & Sewer Division	691-0804	Fax: 691-5729
Highway Division	691-0771	Fax: 691-1798
Engineering Division	691-0770	Fax: 691-1798

### MEMO

To: City/Village Consolidation Committee

CC: City of Pewaukee Common Council

From: Jeffrey Weigel, Public Works Director

Date: February 11, 2010

Re: Proposed Consolidation and Financial Impacts on the Water/Sewer Utilities in the City

The purpose of this memorandum is to more clearly define our opinion on the study and its projected financial impacts as it relates to the Water and Sewer Utility operations in the City. It is clear from the Consolidation Committee meeting of February 4, 2010 that there may be a misunderstanding of statements made by either me or our department staff as it relates to these issues. I apologize if our statements have been unclear and have led Committee members to believe that we have objections to the study results. We don't. We concur that the consolidation of the City and Village water utilities should lead to capital infrastructure savings of up to \$8.3 M between the two utilities, provided that the assumptions made in the study are validated over time. We are confident that during the first two years of consolidation that at least \$3.2 M in infrastructure will be saved, and if the decision to consolidate occurs in a timely manner, preferably this year, then that near term/immediate savings would increase to approximately \$5 M (the increase in savings is resultant of the resolution of the City Hall water tower issue). Ultimately, the consolidation of the water utilities should lead to the predicted \$8.3 M in savings if the plan assumptions prove to be accurate. Said another way, we believe that the consolidation of the City and Village water utilities will result in infrastructure construction cost savings of between \$3.2 M and \$8.3 M, with additional savings in annual operating costs. The following points will outline our position.

It is important to preface our comments with the understanding that Ruekert-Mielke has been our primary consultant for water and sewer issues for over thirty years. We rely on their technical expertise. It is also important to disclose that as a staff we have generally shared the intuitive belief that a merged or consolidated utility would save significantly in both capital and operational expenditures. It is difficult, however, to confirm that exactly \$8.3 M in savings will be achieved during the life of this study. Like most studies, assumptions are made, and if those

assumptions are accurate it is likely that the cost savings will approach the projected amount. But, like any study that is based on a model, that model has to be periodically calibrated and adjusted as time moves forward to reflect the validity of the assumptions. For example, the study uses the daily water demands contained in SEWRPC's recent Water Supply Plan. We do not object to the use of this demand number, but we are somewhat cautious in relying on that value since that demand figure is lower than has been used in the past and the prevalence of lawn irrigation systems in the City skews our experienced demands higher. These demands are the driving force behind the development of new wells, and only experience will prove whether the study water demands are accurate.

Perhaps a brief review of two important and visual elements of the water study would be useful—the East-West Transmission Main and the City Hall Water Tower Replacement. We have attached copies of Table 7 from the Water Utility Consolidation Study and Table 9 from the Utility Consolidation Financial Analysis for your convenience in understanding this memorandum.

Table 7 of the Water Utility Consolidation Study illustrates the water capacity analysis of the City and Village water systems for the three scenarios. Recall that scenario 1A is for the Village and City to maintain four separate water systems, one in the Village and three in the City. In scenario 1B the Village and City would maintain two separate systems, one in each municipality (the City would consolidate its two existing systems and the future northwest system). Finally, scenario 2 represents the capacity analysis of a fully combined or consolidated water system. It is important to note from Table 7 that deficiencies in capacity exist under every scenario, but that the fully combined scenario carries forward only one deficiency. In other words, by connecting our systems together we may provide an almost immediate improved level of service. The merger of the City/Village water utilities and construction of interconnection pipes in Prospect Avenue (West Side) and Bluemound Road (South Side) will eliminate the need for the East-West Transmission main, saving the costs of that \$3.1 M project. In effect, the connected water systems will be supporting each other and substantially reducing the future utility infrastructure costs throughout the new Pewaukee service area.

There are several options under consideration by City staff for the rusty City Hall water tower, including re-painting or replacement on site or at another location. Under scenario 1B (Village and City remain separate, but City merges its two water systems) the Ruekert-Mielke study calls for repainting the tower for \$405,000 in 2011 (after the City completes the East-West Transmission main). The City staff has, with the assistance of Ruekert-Mielke been pursuing the construction of a new water tower off-site for \$1,600,000, commonly referred to as the Ridgeview Water Tower as the replacement for the City Hall tower. With the continued deterioration of the City Hall tower and the suggestion by Dixon Engineering, a consultant that Ruekert-Mielke uses on water tower painting issues, it may be more cost effective for the City to replace the City Hall tower rather than re-paint the tower with the close proximity to residences (the paint on the tower is lead based paint). With that suggestion, we have been working with WE Energies on an alternate new tower site, and we are fairly well along in the process of acquiring the site via easement. We have cleared Federal Aviation Administration (FAA) and Waukesha County approvals relating to height restrictions and airport fly-zones. We have staff level approvals from WE Energies for providing the easement for the tower site. Our inspection of the tower last year revealed structural damages caused by the roof mounted antennae that

should be scheduled for repair by 2014 (the tower must be out of service for the repairs). That inspection has caused us to revise our time schedule with a plan for the new tower to be operational in 2014. Our position on the new Ridgeview Water Tower could be summarized as follows:

- 1) Understanding that the Consolidation Process would most likely lead to a finding that under consolidation, either the Ridgeview Water Tower would not be required, or that it could be delayed for a period of time, most work on the new tower ceased shortly after the City and Village adopted the Consolidation Memorandum of Understanding in September 2006. Our last internal inspection revealed we have less than 5 years to perform the tower repairs. Once we re-start the work on the tower and site we are about 24-36 months out from placing the new tower into service, and we anticipate that site work to take 12-18 months. We need to know if the communities are going to consolidate by the end of 2010, or we are going to have to proceed with the new tower site work as a task parallel to any continued consolidation discussions. Our City budgets will continue to include construction of the new tower until this issue is further resolved.
- 2) Should the communities decide to consolidate prior to the bidding and award of the new tower contract, then we would hold on the new tower while the newly combined utilities can construct the various utility interconnections as outlined in Table 9. The computer modeling can then be calibrated to the new operational data, and a final decision made on the new tower (i.e. go or no-go). If the utilities consolidate, and if the model calibrations verify that we do not need the new tower, then the additional \$1.6 M can be added to the overall cost savings.

Table 9 from the Utility Consolidation Financial Study summarizes that there could be as much as \$6.7M savings of capital infrastructure costs required by fully consolidating the water utilities (scenario 2) vs. keeping the utilities separate (scenario 1B-City consolidates its own utilities). If the new \$1.6 M Ridgeview water tower were to be added to this table, the potential savings would be \$8.3 M. Although the mathematics is clear, we are somewhat cautious in endorsing the full \$8.3 M of savings over the fifteen year study period—there are too many factors or assumptions that may change over that timeframe. We are confident, however, that at least \$3.196 M in savings can be achieved very quickly by merging the City and Village utilities:

Cost w/o consolidation

East-West Transmission Main	\$3,145,500
East-Northwest Transmission Main	540,000
<u>New Tower (Northwest Side)</u>	<u>1,012,500</u>
	\$4,698,000

Cost with consolidation

West Side Interconnection	\$324,000
East Side Interconnection	324,000
Northeast Side Interconnection	189,000
<u>South Side Interconnection</u>	<u>665,000*</u>
	\$1,502,000

**Net savings from interconnections (\$4,698,800 - \$1,502,000)**

**\$3,196,000**

**Savings from Eliminating New Tower**

Eliminate New Tower	\$1,600,000	
Eliminate Painting	405,000	
Add Tower Demolition	(135,000)	
Net Savings of tower	\$1,870,000	<u>\$1,870,000</u>

**Likely Expected Savings****\$5,066,000**

*\*The South Side Interconnection was considered for construction in 2007 and rejected at that time; however, private well mitigation associated with the Still River Well may cause the City to construct this entire pipe excepting the connection to the Village system regardless of consolidation. If the City were to construct this interconnection in 2010/2011 to address Still River well mitigation issues, then the cost could be deleted from the above calculation, and the Net Savings would increase by \$665,000 to \$3.859 M.*

The remaining projects listed in Table 9 that could be eliminated after consolidation are, in our opinion, driven by the future customer demands and the accuracy of the modeling assumptions as we move forward as a consolidated community. These projects could save up \$3,253,000, and we would classify these savings as potential savings.

**Potential Savings from Table 9**

City	New Well with Radium Treatment (2015)	\$2,295,000
	East Well #3 Increase booster capacity (2010)	\$ 148,000
Village	Well #5 Radium Treatment (2014)	<u>\$ 810,000</u>
		\$ 3,253,000

**Summary of City Staff View of Capital Infrastructure Savings**

Savings of which we are confident to occur upon consolidation of water systems:	\$3,196,000
Savings of which are likely to occur upon consolidation of water systems:	\$1,870,000
Savings that could potentially occur upon consolidation of water systems:	<u>\$3,253,000</u>
	<u>\$8,319,000</u>

**Table 7**  
**Capacity Analyses Results Summary**

Scenarios	Capacity Analyses Criteria			
	Well Pump (MGD)	Peak Hour Storage (MG)	Fire Flow Storage (MG)	Emergency Supply (MG)
<u>Scenario 1A</u>				
Village	-0.16	0.43	0.36	1.00
City-East	-1.34	-0.02	-0.98	-0.32
City-West	-0.84	0.06	-0.47	1.22
City-Northwest	-0.63	-0.10	-0.92	-0.32
<u>Scenario 1B</u>				
Village	-0.16	0.43	0.36	1.00
City	-1.87	-0.06	-0.83	0.58
<u>Scenario 2</u>				
Village/City	-0.47	0.49	0.61	1.57

Negative entries indicate deficiencies.

Source: Ruekert/Mielke



**Table 9 - Water Utility Capital Improvements Plan**

Project	Description	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Scenario 1B <sup>(1)</sup></b>																	
City																	
Still River Well	with 100,000 gallon reservoir	\$1,552,500															
Well 2 - Deer Haven	Add pumping station	\$405,000															
New Well with Radium Treatment																	\$2,295,000
New Elevated Tank											\$1,012,500						
Standpipe Repaint	Repaint							\$202,500									
City Hall Water Tower	Repaint		\$405,000														
East Well 3	Increase pump capacity	\$148,500															
East - West Transmission		\$3,145,500															
East - Northwest Transmission												\$540,000					
Misc Rehab and Replacement <sup>(2)</sup>							\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
<b>Subtotal City Costs</b>		<b>\$5,251,500</b>	<b>\$405,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$100,000</b>	<b>\$302,500</b>	<b>\$100,000</b>	<b>\$100,000</b>	<b>\$100,000</b>	<b>\$1,652,500</b>	<b>\$100,000</b>	<b>\$100,000</b>	<b>\$100,000</b>	<b>\$100,000</b>	<b>\$2,395,000</b>
<b>Village</b>																	
Lake St. Water Tower Repaint	Repair and Repaint	\$150,000															
River Hills Water Main Relay	Replace Mains & Laterals	\$850,000															
Well 2 VFD	Install VFD on well pump motor	\$80,000															
Standpipe Repaint	Repair and Repaint		\$200,000														
Well 2 Valve Vault Replacement			\$15,000														
Replace Utility Truck			\$35,000														
Well 3 Reservoir Repaint	Repair and Repaint			\$110,000													
Well 4 Pump Rehabilitation	Repair as necessary			\$85,000													
Prospect Ave. Water Main	230' Loop at Maple			\$35,000													
Quinlan Tower Repaint	Interior Repaint				\$85,000												
Well 3 Generator & Garage Addition					\$250,000												
Well 6 Pump Rehabilitation	Repair as necessary					\$35,000											
Well 5 Radium Treatment						\$810,000											
Misc Replacement and Rehab <sup>(2)</sup>							\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
<b>Subtotal Village Costs</b>		<b>\$1,080,000</b>	<b>\$250,000</b>	<b>\$230,000</b>	<b>\$335,000</b>	<b>\$845,000</b>	<b>\$200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>
<b>Total Through 2025</b>		<b>\$15,746,500</b>															
<b>Scenario 2 <sup>(1)</sup></b>																	
Lake St. Water Tower Repaint	Repair and Repaint	\$150,000															
River Hills Water Main Relay	Replace Mains & Laterals	\$850,000															
Well 2 VFD	Install VFD on well pump motor	\$80,000															
Standpipe Repaint	Repair and Repaint		\$200,000														
Well 2 Valve Vault Replacement			\$15,000														
Replace Utility Truck			\$35,000														
Well 3 Reservoir Repaint	Repair and Repaint			\$110,000													
Well 4 Pump Rehabilitation	Repair as necessary			\$85,000													
Prospect Ave. Water Main	230' Loop at Maple			\$35,000													
Quinlan Tower Repaint	Interior Repaint				\$85,000												
Well 3 Generator & Garage Addition					\$250,000												
Well 6 Pump Rehabilitation	Repair as necessary					\$35,000											
Standpipe Repaint	Repaint							\$202,500									
City Hall Water Tower	Demolition of tower		\$135,000														
Still River Well	with 100,000 gallon reservoir	\$1,552,500															
Well 2 - Deer Haven	Add pumping station	\$405,000															
West Side Interconnection		\$324,000															
East Side Interconnection		\$324,000															
Northeast Side Interconnection		\$189,000															
South Side Interconnection		\$665,000															
Misc Rehab and Replacement <sup>(2)</sup>							\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000
<b>Subtotal Scenario 2</b>		<b>\$4,539,500</b>	<b>\$385,000</b>	<b>\$230,000</b>	<b>\$335,000</b>	<b>\$35,000</b>	<b>\$300,000</b>	<b>\$502,500</b>	<b>\$300,000</b>	<b>\$300,000</b>	<b>\$300,000</b>	<b>\$300,000</b>	<b>\$300,000</b>	<b>\$300,000</b>	<b>\$300,000</b>	<b>\$300,000</b>	<b>\$300,000</b>
<b>Total Through 2025</b>		<b>\$9,027,000</b>															
<b>Difference</b>		<b>\$6,719,500</b>															

Notes:

(1) Source: Ruekert & Mielke, Inc.

(2) Minimal amount for rehab and replacement of pumps, vaults, vehicles, limited water main relays, etc.