



Original Cost Study

of

Village of Manteno
Water System

as of

March 2006

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General

The purpose of this study is to determine the original cost less depreciation of the physical assets of the water system of the Village of Manteno (Village). The Village's water system is in the north central portion of Kankakee County and situated north of the water distribution system of the Kankakee Division of Aqua Illinois, Inc. (Aqua). The Village's water system is the subject of an asset purchase agreement between the Village and Aqua. Aqua's water rates are regulated by the Illinois Commerce Commission (ICC) which has relied on original cost rate base (net investment) for rate setting purposes. The ICC's treatment of acquisition prices for rate setting purposes depend on such issues as quality and reliability of service, operation efficiencies, economies of scale, impact on water rates and various cost considerations. The major consideration, however, is the net original cost (cost less depreciation) of the assets to the person or entity first devoting them to public use.

The focus of this report is to estimate the original cost less depreciation of the water system assets. A summary of our findings is set forth on the next page, which shows the total estimated original cost less depreciation in the amount of \$10,749,600 as of March, 2006.

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Account Number	Account Description	2004 Reproduction Cost New	Original Cost	Original Cost Depreciation	Original Cost Less Depreciation
307	Wells & Springs	\$ 560,000	\$ 449,900	\$ 67,900	\$ 382,000
311	Electric Pumping Equipment	60,000	57,600	7,400	50,200
320	Water Treatment Equipment	830,600	827,400	35,600	791,900
330	Standpipes	1,717,000	1,439,800	257,100	1,182,700
331	Mains	10,430,700	7,216,500	960,300	6,256,200
333	Services	2,105,300	1,379,600	240,000	1,139,600
334	Meters	659,900	592,800	275,100	317,800
335	Hydrants	827,500	535,200	110,400	424,700
342	Stores Equipment	50,000	50,000	6,500	43,500
346	Communication Equipment	219,000	219,000	58,000	161,000
Total		\$17,460,000	\$12,767,800	\$2,018,300	\$10,749,600

Because the Village does not have records to identify the actual original cost and accumulated depreciation, our estimate is based on a determination of the current reproduction cost and a trending of that cost to the year of original installation, along with an adjustment for depreciation to reflect the current condition of the assets. This method required the development of an aged inventory of the assets, a pricing of that inventory using various current cost and construction data, a trend of the current costs back to the original year of installation, and an estimate of the current condition of the assets using the ages of the assets and their relationship to the appropriate average service lives.

Inventory

Aqua developed and furnished a substantial inventory of assets on the basis of data provided by the Village, as well as its own analysis, including sources of supply, treatment equipment, pumping equipment, storage facilities, stores equipment, communication equipment, mains by size, type, length, quantities and age, service laterals, meters and hydrants. We analyzed that data and, as necessary, included construction units in order to enable a complete pricing. All quantities were checked as to general reasonableness and were discussed with Aqua personnel. They were also checked for consistency by reference to the water system records. Appendix A contains a detailed list of all quantities and locations (where available) as part of the summary of unit pricing calculations, trending for original cost and adjustments for depreciation.

Pricing

Wherever possible, actual cost data as provided by the company, were used as the basis for unit pricing. This type of cost data provides the most reliable indication of current reproduction costs, because local pricing takes into account ground conditions, excavation requirements and various other factors that general pricing models cannot provide with the same degree of accuracy. Pricing for a similarly developed region were used to establish cost requirements for surface restoration. Both published construction cost data and unit cost information from other appraisals were relied on in conjunction with actual data. This approach confirms the reasonableness of the costs and also provides a range of pricing criteria that is useful in estimating unit costs for various sizes and types

of plant items for which specific bids were not available. Using multiple sources to select unit prices improves the reliability of the estimates, and guards against unusual bidding circumstances that may include inappropriately high or low unit prices.

With respect to wells and storage equipment certain original average costs based on appraisals of similar properties and costs experienced by the Aqua for similar assets were increased for omissions and contingencies, engineering, administration, supervision and interest during construction.

With respect to mains, the cost to furnish and install, excavate, backfill, permits and labor were developed on the basis of the average of prices for 2, 3, 4, 6, 8, 12 and 24 inch pipe. Adjustments were made for surface restoration and valves by pricing the overall system and converting the total to a unit cost, by size and length of main. An adjustment was also made to reflect the cost of fittings and other appurtenances for which specific units could not be quantified, and an allowance was made for omissions and contingencies and engineering.

Unit pricing of service laterals includes the cost of pipe or tubing, valve or corporation stop, saddles, fittings, excavation, backfill, surface restoration and labor. An allowance was made for omissions and contingencies, engineering, administration, supervision and interest during construction. Pricing of meters includes both the meter and meter installation. Hydrant costs include the hydrant, pipe, fittings, excavation, backfill and labor, and auxiliary valves. The unit pricing for services, meters and hydrants is based

on current cost experience and, as in the case of mains, pricing is consistent with current industry costs.

Depreciation

Depreciation was estimated in order to reflect the current condition of the assets. Our calculations were based on the age and average service lives of the property. We also allowed for the remaining life of any asset that has an average age greater than the average service life used for that type of asset. The installation dates were supplied by the AQUA with as much detail as available. Average service lives are within the range of industry standards and the range recognized by the ICC for Illinois utilities. Depreciation estimates for assets currently in service but with ages exceeding or near the respective average service lives, were limited to 85% on the basis of judgment in order to recognize the remaining life of the assets. The overall result is that the Village's water system has a depreciated value of approximately 75% of its original cost.

Trending

Because of a lack of information it was not feasible to establish the original cost on the basis of actual cost records. Therefore, a trend of the reproduction cost back to the year of installation was used to determine the original cost. The Handy-Whitman Index of Public Utility Construction Costs was used to develop the trending factors. This method has been a widely-accepted for valuation purposes

Conclusion

The original construction specifications are unknown, and the use of the current cost of installation under existing construction requirements is likely not precisely how the original construction actually occurred. Such differences would tend to overstate the original cost calculation. On the other hand, our reproduction cost figures assume one continuous construction effort instead of the actual original installations that were constructed on a piecemeal basis, which would tend to understate our original cost estimate. It is also likely that the remaining life of all assets will be greater on average than our use of average service lives. This factor would also tend to understate the net original cost value. These unknown factors tend to produce offsetting inaccuracies.

It is our opinion that \$10,749,600 for the Village's water system is a reasonable estimate of the depreciated original cost.

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Account Number	Account Description	General Description	Detail	Unit	Unit Price	Year Installed	2004		Trend Line	Original Index	2004 Index	Original Cost	Age	Average Service Life	Percent Depreciation	Original Cost Less	
							Reproduction Cost New									Depreciation	Depreciation
307	Wells & Springs	Well 4	electric service	EA	\$ 80,000	1979	\$ 80,000		2	167	364	\$ 36,703	27	60	45%	\$ 16,516	\$ 20,187
307	Wells & Springs	Well 5	electric service	EA	\$ 80,000	1991	\$ 80,000		2	251	364	\$ 55,165	15	60	25%	\$ 13,791	\$ 41,374
307	Wells & Springs	Well 6	electric service	EA	\$ 80,000	1996	\$ 80,000		2	295	364	\$ 64,835	10	60	17%	\$ 11,022	\$ 53,813
307	Wells & Springs	Well 7	electric service	EA	\$ 80,000	1997	\$ 80,000		2	304	364	\$ 66,813	9	60	15%	\$ 10,022	\$ 56,791
307	Wells & Springs	Well 8	electric service	EA	\$ 80,000	2001	\$ 80,000		2	338	364	\$ 74,286	5	60	8%	\$ 5,943	\$ 68,343
307	Wells & Springs	Well 3	electric service	EA	\$ 80,000	2002	\$ 80,000		2	346	364	\$ 76,044	4	60	7%	\$ 5,323	\$ 70,721
307	Wells & Springs	Well 9	electric service	EA	\$ 80,000	2002	\$ 80,000		2	346	364	\$ 76,044	4	60	7%	\$ 5,323	\$ 70,721
							<u>\$ 560,000</u>					<u>\$ 449,890</u>				<u>\$ 67,940</u>	<u>\$ 381,950</u>
311	Electric Pumping Equipment	#7	Efficiency Vertical Lift	EA	\$ 10,000	1997	\$ 10,000		9	476	547	\$ 8,702	9	35	26%	\$ 2,263	\$ 6,439
311	Electric Pumping Equipment	#6	Vertical Lift Turbine; Bronze	EA	\$ 10,000	2001	\$ 10,000		9	531	547	\$ 9,707	5	35	14%	\$ 1,359	\$ 8,348
311	Electric Pumping Equipment	#3	submersible stainless steel	EA	\$ 10,000	2002	\$ 10,000		9	533	547	\$ 9,744	4	35	11%	\$ 1,072	\$ 8,672
311	Electric Pumping Equipment	#9	GPM 6" Grundfos	EA	\$ 20,000	2002	\$ 20,000		9	533	547	\$ 19,488	4	35	11%	\$ 2,144	\$ 17,344
311	Electric Pumping Equipment	#4	submersible SSP & motor	EA	\$ 10,000	2004	\$ 10,000		9	547	547	\$ 10,000	2	35	6%	\$ 600	\$ 9,400
							<u>\$ 60,000</u>					<u>\$ 57,641</u>				<u>\$ 7,438</u>	<u>\$ 50,203</u>
320	Water Treatment Equipment	Chlorinator	cap.; Switch-Over w/ Dual	EA	\$ 4,000	1991	\$ 4,000		17	316	454	\$ 2,784	15	45	33%	\$ 919	\$ 1,865
320	Water Treatment Equipment	Fluoride	B111 LMI Chemical Feeder	EA	\$ 1,000	1991	\$ 1,000		17	316	454	\$ 696	15	45	33%	\$ 230	\$ 466
320	Water Treatment Equipment	Chlorinator	cap.; Switch-Over w/ Dual	EA	\$ 4,000	1997	\$ 4,000		17	373	454	\$ 3,286	9	45	20%	\$ 657	\$ 2,629
320	Water Treatment Equipment	Fluoride	B111 LMI Chemical Feeder	EA	\$ 1,000	1997	\$ 1,000		17	373	454	\$ 822	9	45	20%	\$ 164	\$ 658
320	Water Treatment Equipment	Chlorinator	cap.; Switch-Over w/ Dual	EA	\$ 4,000	2001	\$ 4,000		17	423	454	\$ 3,727	5	45	11%	\$ 410	\$ 3,317
320	Water Treatment Equipment	Fluoride	B111 LMI Chemical Feeder	EA	\$ 1,000	2001	\$ 1,000		17	423	454	\$ 932	5	45	11%	\$ 103	\$ 829
320	Water Treatment Equipment	Chlorinator	pound per day ("PPD")	EA	\$ 4,000	2002	\$ 4,000		17	436	454	\$ 3,841	4	45	9%	\$ 346	\$ 3,495
320	Water Treatment Equipment	Chlorinator	cap.; Switch-Over w/ Dual	EA	\$ 4,000	2002	\$ 4,000		17	436	454	\$ 3,841	4	45	9%	\$ 346	\$ 3,495
320	Water Treatment Equipment	Fluoride	B111 LMI Chemical Feeder	EA	\$ 1,000	2002	\$ 1,000		17	436	454	\$ 960	4	45	9%	\$ 86	\$ 874
320	Water Treatment Equipment	Fluoride	B150 LMI Chemical Feeder	EA	\$ 1,200	2002	\$ 1,200		17	436	454	\$ 1,152	4	45	9%	\$ 104	\$ 1,048
320	Water Treatment Equipment	Chlorinator	capacity, w/ 25-PPD	EA	\$ 4,000	2004	\$ 4,000		17	454	454	\$ 4,000	2	45	4%	\$ 160	\$ 3,840
320	Water Treatment Equipment	Fluoride	B111 LMI Chemical Feeder	EA	\$ 1,000	2004	\$ 1,000		17	454	454	\$ 1,000	2	45	4%	\$ 40	\$ 960
320	Water Treatment Equipment	Disinfection	In-line reactors with automatic	EA	\$ 133,400	2004	\$ 133,400		17	454	454	\$ 133,400	2	45	4%	\$ 5,336	\$ 128,064
320	Water Treatment Equipment	Disinfection	In-line reactors with automatic	EA	\$ 133,400	2004	\$ 133,400		17	454	454	\$ 133,400	2	45	4%	\$ 5,336	\$ 128,064
320	Water Treatment Equipment	Disinfection	In-line reactors with automatic	EA	\$ 133,400	2004	\$ 133,400		17	454	454	\$ 133,400	2	45	4%	\$ 5,336	\$ 128,064
320	Water Treatment Equipment	Disinfection	In-line reactors with automatic	EA	\$ 133,400	2004	\$ 133,400		17	454	454	\$ 133,400	2	45	4%	\$ 5,336	\$ 128,064
320	Water Treatment Equipment	Disinfection	In-line reactors with automatic	EA	\$ 133,400	2004	\$ 133,400		17	454	454	\$ 133,400	2	45	4%	\$ 5,336	\$ 128,064
							<u>\$ 830,600</u>					<u>\$ 827,441</u>				<u>\$ 35,581</u>	<u>\$ 791,860</u>
330	Standpipes	Legged Tank	Iron (repainted by Maxcor in	EA	\$ 592,000	1981	\$ 592,000		24	250	438	\$ 337,900	25	50	50%	\$ 168,950	\$ 168,950
330	Standpipes	Spheriod	Iron	EA	\$ 1,125,000	2002	\$ 1,125,000		24	429	438	\$ 1,101,884	4	50	8%	\$ 88,151	\$ 1,013,733
							<u>\$ 1,717,000</u>					<u>\$ 1,439,784</u>				<u>\$ 257,101</u>	<u>\$ 1,182,683</u>
342	Stores Equipment	Inventory	Radio Water Meters (100); Hydrants (17); DI Pipe; Valve and Curb Stop Boxes	EA	\$ 50,000	2002	\$ 50,000		63	132	132	\$ 50,000	4	30	13%	\$ 6,500	\$ 43,500
346	Communication Equipment	Well #3 SCAI U.S. Filter	D620i Telemetry C	EA	\$ 28,000	2002	\$ 28,000		63	132	132	\$ 28,000	4	10	40%	\$ 11,200	\$ 16,800
346	Communication Equipment	Tank #1 SCA U.S. Filter	D620i Telemetry C	EA	\$ 28,000	2002	\$ 28,000		63	132	132	\$ 28,000	4	10	40%	\$ 11,200	\$ 16,800
346	Communication Equipment	Tank #2 SCA U.S. Filter	D620i Telemetry C	EA	\$ 30,000	2003	\$ 30,000		63	132	132	\$ 30,000	3	10	30%	\$ 9,000	\$ 21,000
346	Communication Equipment	Well #4 SCAI U.S. Filter	D620i Telemetry C	EA	\$ 40,000	2004	\$ 40,000		63	132	132	\$ 40,000	2	10	20%	\$ 8,000	\$ 32,000
346	Communication Equipment	Well #6 SCAI U.S. Filter	D620i Telemetry C	EA	\$ 31,000	2004	\$ 31,000		63	132	132	\$ 31,000	2	10	20%	\$ 6,200	\$ 24,800
346	Communication Equipment	Well #7 SCAI U.S. Filter	D620i Telemetry C	EA	\$ 31,000	2004	\$ 31,000		63	132	132	\$ 31,000	2	10	20%	\$ 6,200	\$ 24,800
346	Communication Equipment	Well #9 SCAI U.S. Filter	D620i Telemetry C	EA	\$ 31,000	2004	\$ 31,000		63	132	132	\$ 31,000	2	10	20%	\$ 6,200	\$ 24,800
							<u>\$ 219,000</u>					<u>\$ 219,000</u>				<u>\$ 58,000</u>	<u>\$ 161,000</u>

Exhibit JFG - 3.1

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Appendix A
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Account Number	Account Description	Size (in)	Type	Unit	Unit Price	Quantity	2004 Reproduction		Original Cost		Original Cost
							Cost New	Original Cost	Depreciation	Less Depreciation	
331	Mains	2	CI	L.F.	25	2,020	\$ 50,500	\$ 12,100	\$ 4,568	\$ 7,532	
			DI	L.F.	25	400	\$ 10,000	\$ 8,185	\$ 858	\$ 7,327	
			PVC	L.F.	22	930	\$ 20,460	\$ 16,692	\$ 1,790	\$ 14,902	
		3	CI	L.F.	28	230	\$ 6,440	\$ 2,278	\$ 654	\$ 1,624	
			4	CI	L.F.	30	17,120	\$ 513,600	\$ 55,642	\$ 31,867	\$ 23,775
		4	DI	L.F.	30	9,600	\$ 288,000	\$ 238,162	\$ 25,216	\$ 212,946	
			PVC	L.F.	28	4,450	\$ 124,600	\$ 109,609	\$ 8,296	\$ 101,313	
		6	CI	L.F.	40	26,480	\$ 1,059,200	\$ 204,229	\$ 89,113	\$ 115,116	
			DI	L.F.	40	52,058	\$ 2,082,320	\$ 1,498,073	\$ 211,506	\$ 1,286,567	
			SC	L.F.	155	420	\$ 65,100	\$ 51,332	\$ 6,160	\$ 45,172	
		8	CI	L.F.	52	640	\$ 33,280	\$ 11,383	\$ 4,098	\$ 7,285	
			DI	L.F.	52	37,390	\$ 1,944,280	\$ 1,588,941	\$ 179,261	\$ 1,409,680	
		12	CI	L.F.	75	390	\$ 29,250	\$ 11,227	\$ 3,817	\$ 7,410	
			DI	L.F.	75	47,890	\$ 3,591,750	\$ 2,844,603	\$ 360,290	\$ 2,484,313	
			SC	L.F.	195	660	\$ 128,700	\$ 101,482	\$ 12,178	\$ 89,304	
		16	DI	L.F.	100	3,040	\$ 304,000	\$ 283,363	\$ 17,002	\$ 266,361	
24	PVC		L.F.	140	1,280	\$ 179,200	\$ 179,200	\$ 3,584	\$ 175,616		
Grand Total						204,998	\$ 10,430,680	\$ 7,216,501	\$ 960,258	\$ 6,256,243	
333	Services	3/4	Copper	EA	850	962	\$ 817,700	\$ 396,510	\$ 125,594	\$ 270,916	
					900	2	\$ 1,800	\$ 390	\$ 225	\$ 165	
			Galv	EA	850	147	\$ 124,950	\$ 8,907	\$ 7,425	\$ 1,482	
					900	1	\$ 900	\$ 55	\$ 47	\$ 8	
		1	Lead	EA	850	2	\$ 1,700	\$ 58	\$ 50	\$ 8	
			Copper	EA	850	1	\$ 850	\$ 497	\$ 164	\$ 333	
					900	1,278	\$ 1,150,200	\$ 972,832	\$ 106,213	\$ 866,619	
			Galv	EA	900	8	\$ 7,200	\$ 329	\$ 281	\$ 48	
Grand Total						2,401	\$ 2,105,300	\$ 1,379,578	\$ 239,999	\$ 1,139,579	
334	Meters	3/4	ECR	EA	150	423	\$ 63,450	\$ 48,194	\$ 37,807	\$ 10,387	
			Radio	EA	250	594	\$ 148,500	\$ 143,569	\$ 50,627	\$ 92,942	
		5/8	ECR	EA	150	990	\$ 148,500	\$ 110,632	\$ 86,383	\$ 24,249	
			Radio	EA	150	1	\$ 150	\$ 119	\$ 89	\$ 30	
					250	1,197	\$ 299,250	\$ 290,321	\$ 100,168	\$ 190,153	
Grand Total						3,205	\$ 659,850	\$ 592,835	\$ 275,074	\$ 317,761	
335	Hydrants	4	Darling	EA	2500	2	\$ 5,000	\$ 480	\$ 408	\$ 72	
			Hanniston	EA	2500	1	\$ 2,500	\$ 240	\$ 204	\$ 36	
			Rensselae	EA	2500	4	\$ 10,000	\$ 726	\$ 617	\$ 109	
			Waterous	EA	2500	1	\$ 2,500	\$ 1,410	\$ 508	\$ 902	
		4-1/2	Mueller	EA	2500	14	\$ 35,000	\$ 14,310	\$ 5,269	\$ 9,041	
			Rensselae	EA	2500	1	\$ 2,500	\$ 156	\$ 133	\$ 23	
		4-1/4	Mueller	EA	2500	4	\$ 10,000	\$ 5,823	\$ 1,877	\$ 3,946	
		5-1/4	Division	EA	2500	1	\$ 2,500	\$ 2,460	\$ 148	\$ 2,312	
			East Jorda	EA	2500	15	\$ 37,500	\$ 10,580	\$ 5,313	\$ 5,267	
			Eddy	EA	2500	2	\$ 5,000	\$ 485	\$ 399	\$ 86	
			Hanniston	EA	2500	2	\$ 5,000	\$ 476	\$ 405	\$ 71	
			Mueller	EA	2500	274	\$ 685,000	\$ 494,000	\$ 93,755	\$ 400,245	
			Rensselae	EA	2500	10	\$ 25,000	\$ 4,010	\$ 1,387	\$ 2,623	
		Grand Total						331	\$ 827,500	\$ 535,156	\$ 110,423