

Alternative 2B - Lake Michigan Supply with Return to MMSD South Shore Outfall (MMSD Alternative #4)

Supply from Oak Creek. Return to MMSD South Shore Outfall (MMSD Alternative #4).

Capital Cost

	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total</u>
Lake Michigan Supply Pump Station (27th and Puetz Rd)			
16.7 mgd	1	\$ 8,830,125	\$ 8,831,000
Lake Michigan Supply Pipeline			
19 miles of 30"	100,320	\$ 429	\$ 43,084,000
Return Pump Station and Pipeline Direct to Lake Michigan Near Milwaukee and Oak Creek			
16.7 mgd	1	\$ 9,359,000	\$ 9,359,000
25.8 miles of 30"	136,224	\$ 445	\$ 60,604,000
Distribution System Improvements			
5 mi of 24" pipes	24,800	\$ 206	\$ 5,109,000
Subtotal			\$ 126,987,000
3% markup for Bonds & Insurance			\$3,810,000
5% markup for Mob/Demob			\$6,350,000
8% markup for Contractors Overhead			\$10,972,000
4% markup for Contractors profit			\$5,486,000
25% Contingency			\$38,402,000
Subtotal Markups and Contingency			\$ 65,020,000
Total Project Construction Costs			\$ 192,007,000
8% allowance for engineering and design			\$15,361,000
12% allowance for permitting, legal and admin.			\$23,041,000
8% allowance for engr services during construction			\$15,361,000
Subtotal Other Project Costs			\$53,763,000
TOTAL PROJECT CAPITAL COST			\$ 245,800,000

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Operating and Maintenance Cost

Source of Supply	Units	Quantity	Unit Cost	Ext. Cost	Total
Purchased water	\$/1000 gal	3,686,500	\$ 1.830	\$ 6,746,295	
					\$ 6,746,000
Treatment/Pumping					
Lake Michigan Pumping Energy	\$/kWh	6,176,619	\$ 0.06	\$ 370,597	
Lake Michigan Pump Station O&M	%	\$ 8,831,000	2%	\$ 176,620	
Return Flow Pumping Energy	\$/kWh	8,088,971	\$ 0.06	\$ 485,338	
Return Flow Pump Station O&M	%	\$ 9,359,000	2%	\$ 187,180	
MMSD Outfall Sewer Fee	%	\$ 3,658,838	5%	\$ 182,942	
					\$ 1,403,000
Transmission					
Operation and Maintenance	\$/ft/yr	142,560	\$ 0.52	\$ 74,131	
					\$ 74,131
Total O&M (\$/yr.)					\$ 8,200,000

PRESENT WORTH (6%, 20 yrs)	\$ 94,000,000
PRESENT WORTH (6%, 50 yrs)	\$ 129,000,000
Total Present Worth (6%, 20 years)	\$ 339,800,000
Total Present Worth (6%, 50 years)	\$ 374,800,000