

## Alternative 2A - Lake Michigan Supply with Return Direct to Lake Michigan Near Milwaukee and Oak Creek

Supply from Oak Creek. Return Direct to Lake Michigan Near Milwaukee and Oak Creek. No corridor sharing between pipelines.

### Capital Cost

	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total</u>
<b>Lake Michigan Supply Pump Station (27th and Puetz Rd)</b>			
16.7 mgd	1	\$ 8,830,125	\$ 8,831,000
<b>Lake Michigan Supply Pipeline</b>			
19 miles of 30"	100,320	\$ 429	\$ 43,084,000
<b>Return Pump Station and Pipeline Direct to Lake Michigan Near Milwaukee and Oak Creek</b>			
16.7 mgd	1	\$ 7,297,000	\$ 7,297,000
22 miles of 30"	116,160	\$ 459	\$ 53,282,000
<b>Distribution System Improvements</b>			
5 mi of 24" pipes	24,800	\$ 206	\$ 5,109,000
<b>Subtotal</b>			<b>\$ 117,603,000</b>
3% markup for Bonds & Insurance			\$3,529,000
5% markup for Mob/Demob			\$5,881,000
8% markup for Contractors Overhead			\$10,162,000
4% markup for Contractors profit			\$5,081,000
25% Contingency			\$35,564,000
<b>Subtotal Markups and Contingency</b>			<b>\$ 60,217,000</b>
<b>Total Project Construction Costs</b>			<b>\$ 177,820,000</b>
8% allowance for engineering and design			\$14,226,000
12% allowance for permitting, legal and admin.			\$21,339,000
8% allowance for engr services during construction			\$14,226,000
<b>Subtotal Other Project Costs</b>			<b>\$49,791,000</b>
<b><u>TOTAL PROJECT CAPITAL COST</u></b>			<b><u>\$ 227,600,000</u></b>

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**Operating and Maintenance Cost**

<b>Source of Supply</b>	<b>Units</b>	<b>Quantity</b>	<b>Unit Cost</b>	<b>Ext. Cost</b>	<b>Total</b>
Purchased water	\$/1000 gal	3,686,500	\$ 1.830	\$ 6,746,295	
					\$ 6,746,000
<b>Treatment/Pumping</b>					
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	4,616,262	\$ 0.06	\$ 276,976	
Return Flow Pump Station O&M	%	\$ 7,297,000	2%	\$ 145,940	
					\$ 970,000
<b>Transmission</b>					
Operation and Maintenance	\$/lf/yr	142,560	\$ 0.52	\$ 74,131	
					\$ 74,131
<b>Total O&amp;M (\$/yr.)</b>					<b>\$ 7,800,000</b>

<b>PRESENT WORTH (6%, 20 yrs)</b>	<b>\$ 89,000,000</b>
<b>PRESENT WORTH (6%, 50 yrs)</b>	<b>\$ 123,000,000</b>
<b>Total Present Worth (6%, 20 years)</b>	<b>\$ 316,600,000</b>
<b>Total Present Worth (6%, 50 years)</b>	<b>\$ 350,600,000</b>