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Memorandum

Village of Oak Brook – Water Rate Study Update

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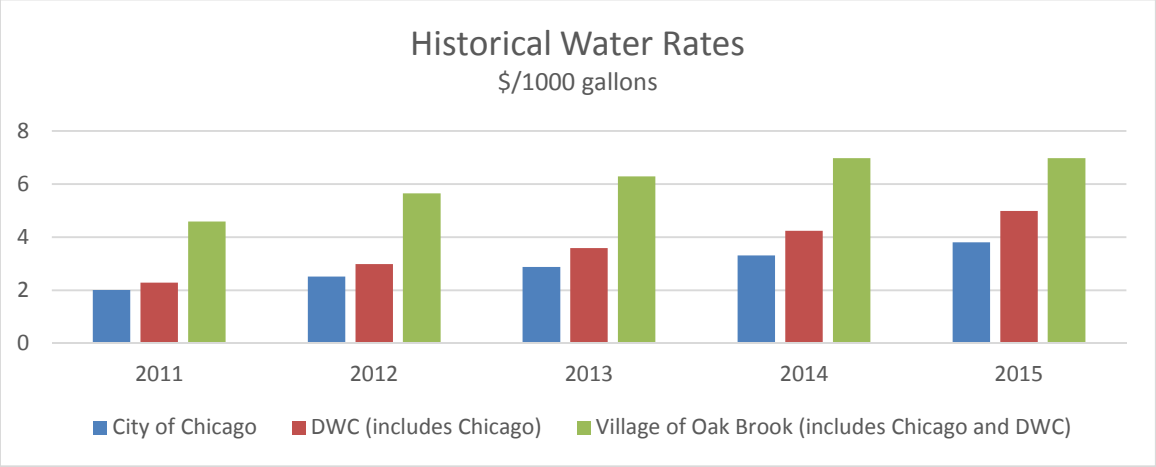
Background

The Village of Oak Brook retained American Infrastructure Technologies, LLC (AIT) to prepare a detailed Capital Improvement Plan (CIP) for its water system and to develop a Water Rate Study in 2010. The study covered the time frame from 2011 to 2020. At that time Chicago water rates were projected to increase by a modest amount. However, in 2011 the Chicago administration, under its new Mayor, announced a 4 year (25%, 15%, 15% and 15%) rate increase starting January 2012. This high rate increase was justified by Chicago to pay for its aging infrastructure which supplies water to the City and Suburbs. The DuPage Water Commission (DWC) which purchases water from Chicago and then sells it to the DuPage County municipalities including Oak Brook, increased its water rates to adjust for Chicago rate increase plus increases in its own expenditures by 30%, 20%,18% and 17% starting in 2012. Figure 1 shows the water rates from 2011 to 2015.



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In 2011 Village of Oak Brook began a multi-year capital program to replace water mains with a break history and/or maintenance issues.

With a significant rate increase from DWC and a major main replacement plan undertaken by Oak Brook, there was a need to review the rate structure for next 5 years. AIT reviewed water system expenses and revenues projected over next 5 years (2016 – 2020). Rate projections have been made to generate adequate revenues to properly fund and maintain the water system.

Water System Expenses

Water System Expenses, broken down by key categories, are shown in Table 1. These categories are described below:

Purchased Water

Lake Michigan water purchased from DuPage Water Commission is the largest expense of the water system. The Village's water rates are very sensitive to increases from the DuPage Water Commission. The DWC rate is comprised of O&M and Fixed charges per 1000 gallons. AIT contacted the DuPage Water Commission. They stated that the Fixed charges would end starting in 2016. The DWC does not plan to have any rate increase of their own for the next 5 years. However, they would pass through any rate increase from City of Chicago to their customers.

City of Chicago has indicated that the City is looking to increase water rates starting 2016 by the Consumer Price Index (CPI). The rates would not increase by more than 5% in any year.

The purchased water rate projections are shown in Table 1.

Labor

The labor cost to operate and maintain the water system was provided by the Village including the projections for next 5 years.

Material and Supplies

This category represents the materials and supplies used in the maintenance of the water system. Example would be parts for hydrants, valves and repair clamps for main breaks. The figures in Table 1 were supplied by the Village.

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Contractual

These costs include system services which are contracted out. These figures were provided by the Village. It is our understanding that items such as reduction of loss and unaccounted for flow are included in this category.

Exceptional Charges

These include costs such as management of the system by other Village departments, support for the water system by other Village departments and vehicle replacement costs. These figures were supplied by the Village.

Table 1

Account Title	Comments	2014 Actual	2015 Budget	2016 Projection	2017 Projection	2018 Projection	2019 Projection	2020 Projection
EXPENSES								
PURCHAESD WATER								
City of Chicago Rate $/1000 gal	CPI or 5% increase on Jan 1 every year		3.81	4.00	4.20	4.41	4.63	4.86
DWC O&M rate (Fiscal Year) $/1000 gal	DWC Fiscal May 1 - Apr 30. No rate increase next 5 years by DWC except Chicago increase to be pass through	3.97	4.85	5.04	5.24	5.45	5.67	5.90
DWC Fixed Cost - $/1000 gal.		0.27	0.30	0.00	0.00	0.00	0.00	0.00
DWC Purchased Water - k gals	2015 from Village. 1 % increase beyond 2015	1,062,040	1,075,000	1,085,750	1,096,608	1,107,574	1,118,649	1,129,836
DWC Purchasd water cost $/year		4,216,299	5,213,750	5,472,723	5,746,799	6,036,887	6,343,948	6,669,006
Fixed Charge ($/year)		282,503	322,500	-	-	-	-	-
Total DWC Charges		4,498,801	5,536,250	5,472,723	5,746,799	6,036,887	6,343,948	6,669,006
		(1,196,681)						
OPERATION AND MAINTENANCE EXPENSES								
Total Personnel	From Village	812,709	816,185	812,125	836,489	861,583	887,431	914,054
Total Materials and Supplies	From Village	177,475	101,395	74,545	78,272	82,186	86,295	90,610
Total Operations Contratual	From Village	530,747	717,265	825,862	867,155	910,513	956,038	1,003,840
TOTAL O&M EXPENSES		1,520,931	1,634,845	1,712,532	1,781,916	1,854,282	1,929,764	2,008,504
EXCEPTIONAL CHARGES								
Transfers to other funds	From Village	378,375	399,350	423,720	436,432	449,525	463,010	476,901
Vehicle Replacement Charges	From Village	59,285	74,455	67,750	69,783	71,876	74,032	76,253
TOTAL EXCEPTIONAL CHARGES		437,660	473,805	491,470	506,214	521,401	537,043	553,154
TOTAL OPERATING EXPENSES		6,457,392	7,644,900	7,676,725	8,034,929	8,412,569	8,810,755	9,230,664

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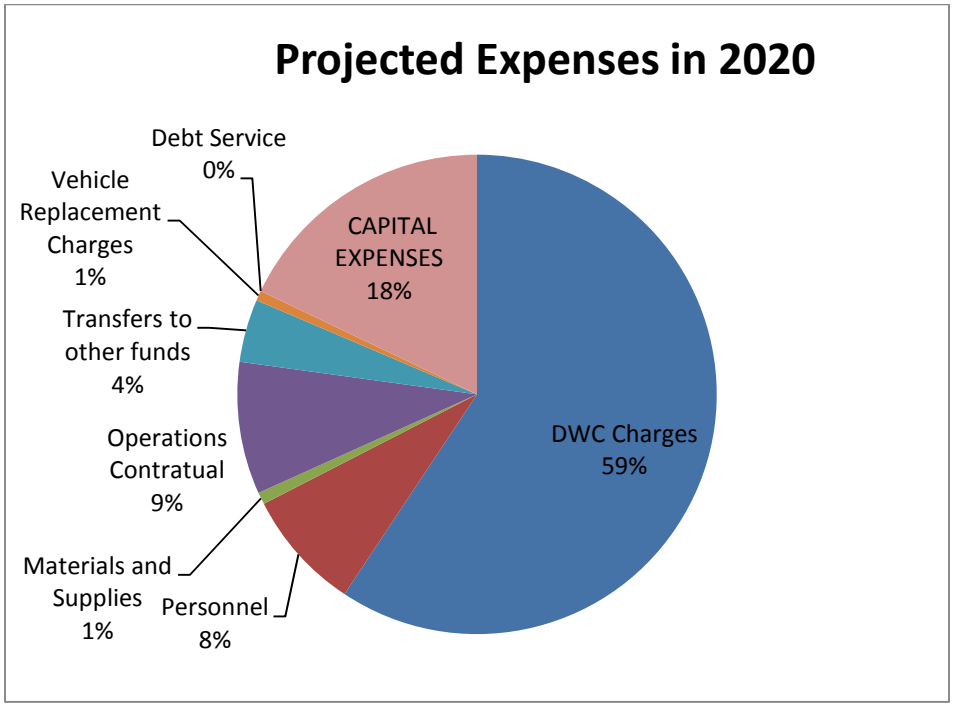
Capital Expenses

The capital expenses for the water system, as developed by the Village, for the next 5 years are:

			5 Year Capital Improvement Plan				
	2015 Budget	2015 Estimate	2016	2017	2018	2019	2020
Project							
Replacement of water meters and data collectors	180,000	180,000	185,400	180,000			
Luthin Road				499,960			
Mockingbird/Camelot/Luthin Water Main	1,440,090	1,440,090					
Concord/Ivy/Devonshire Watermain					2,327,514		
Charleton/Kimberly/Pembroke/Shelburne Water Main							2,012,520
Total Capital Improvement Program	1,620,090	1,620,090	185,400	679,960	2,327,514	-	2,012,520

The pie graph below shows the projected total 2020 water system expenses.



Revenues

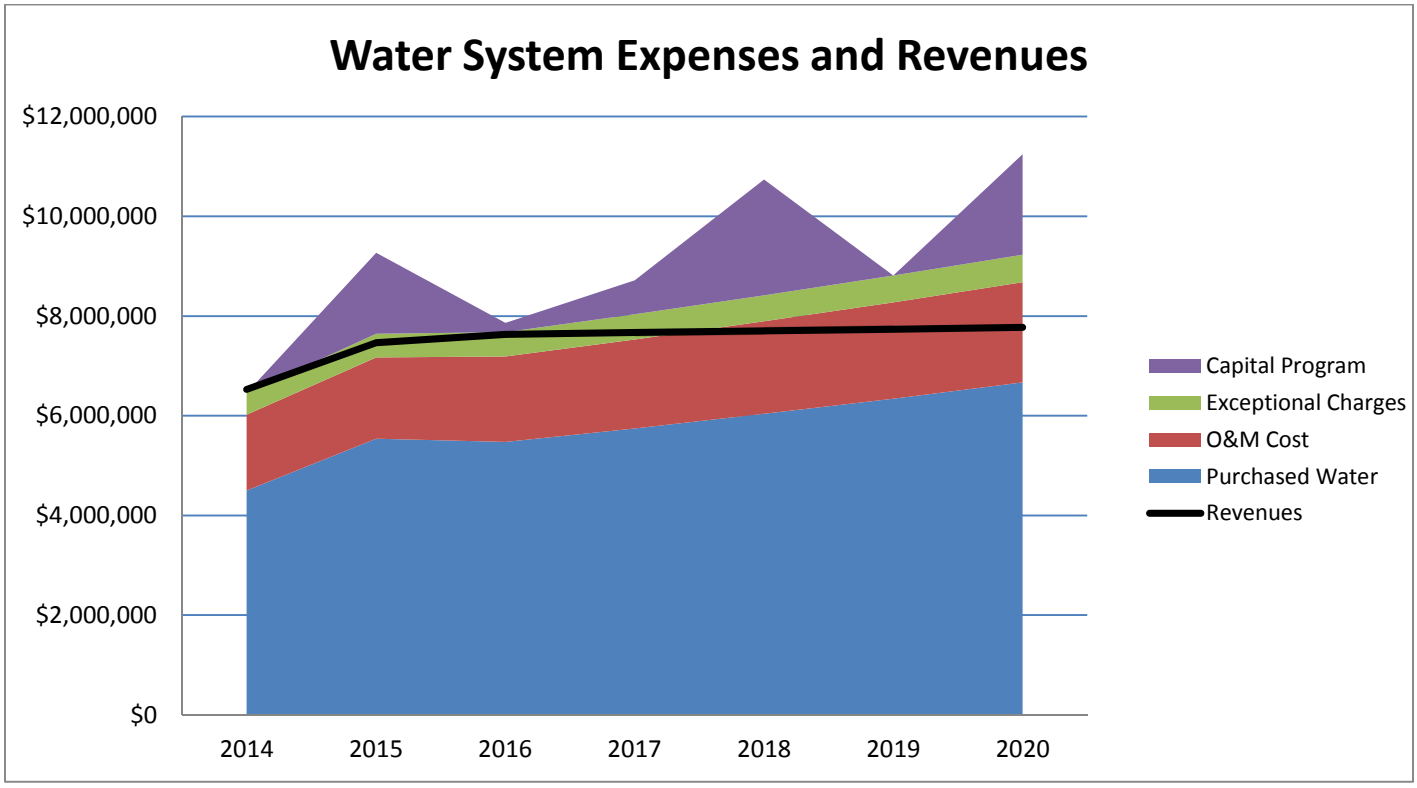
The water system revenues are generated from user charges. Some charges are fixed and other are based on the amount of water used. The Village has a different rate for out-of-town customers. Historically, out-of-town customers account for about 20% of the water sold by the Village. The current

Village water tariff does not have a break for high volume users or provides an incentive for water conservation.

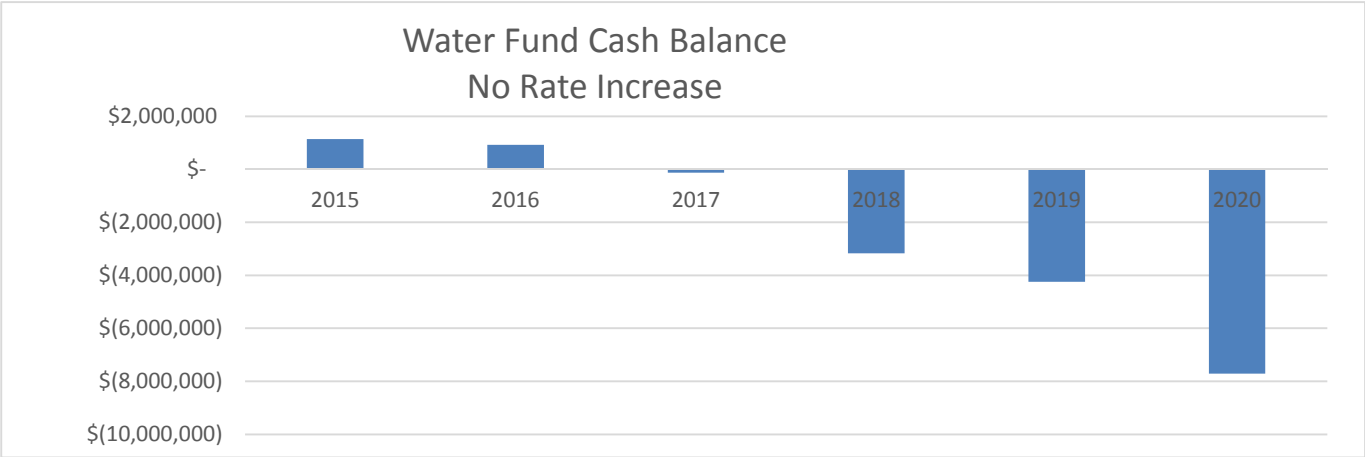
The water fund should have a balance of 3 to 6 months of operating expenses in addition to planned capital expenditures for the near future.

Rate Analysis

The 2015 water fund balance and the projected expenses over next 5 years were reviewed and compared to the projected revenues. The graph below shows the expenses and revenues through 2020 with no rate increase.



It is apparent that the water fund does not have enough revenue to maintain a reserve and pay for capital expenses over the next 5 years. In addition, the water system revenues are not sufficient to pay for the operating expenses. The estimated water fund balance over the next 5 years with **no rate increase** is shown below.



This can be explained by:

- Significant rate increases by the DWC (and Chicago) in the past 4 years. The Village did not raise its rates high enough to keep up with these increases.
- A substantial increase in the non-revenue water in the last 5 years. This represents the volume of water purchased from DWC less water which is sold to customers. This is also referred to as loss and unaccounted for water. In 2010 this figure was around 8%. Now the figure is close to 17%.
- Water main replacement program entirely funded by user fees and water fund balance. It is not uncommon for communities to fund large capital projects with debt and then pay off the debt over a period of time with user fees. This keeps the rates from going up significantly to pay for the capital projects.

Recommended Rates

Rate recommendations are based on the following:

- Village to take steps to reduce its non-revenue water percentage from 17% today to 10% by 2019. The revised IDNR Lake Michigan Water Allocation rules, approved in November 2014, require Lake Michigan Water Allocation Permittees to limit non-revenue water to 12% in 2015, decreasing to 10% by 2019. Permittees whose non-revenue water exceeds the non-revenue thresholds (12% in 2015, decreasing to 10% by 2019) shall submit a water system improvement plan that outlines the actions the permittee plans to undertake, along with a timeframe, to reduce non-revenue water.

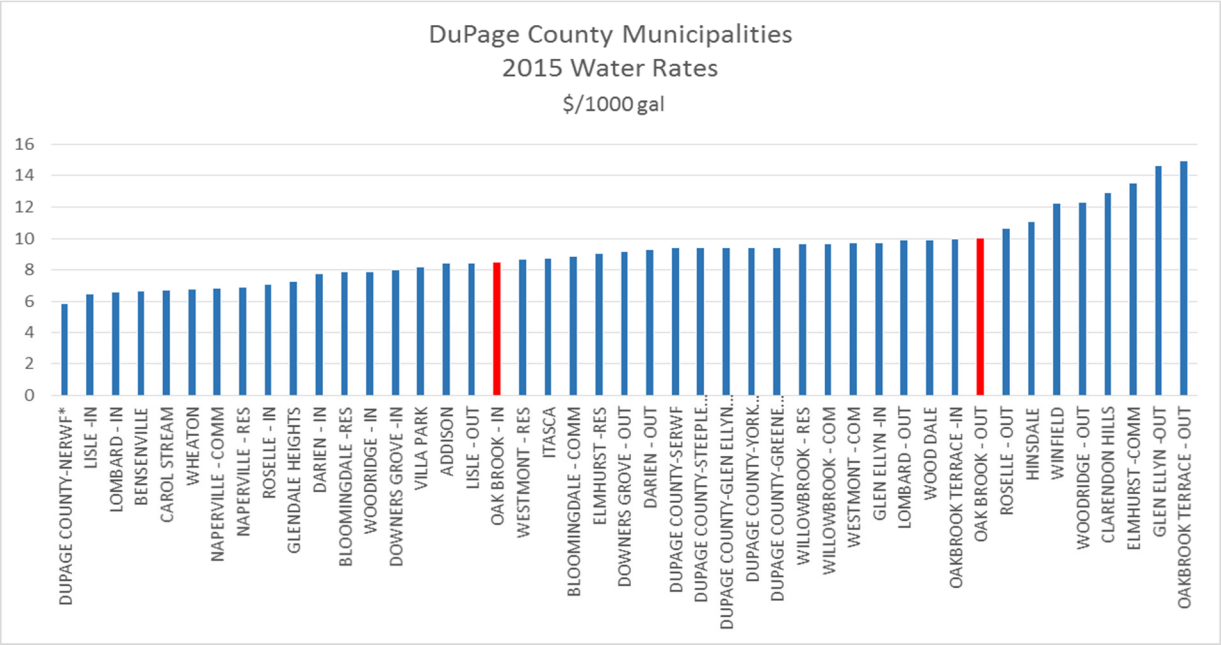
This reduction in non-revenue water represents a savings of approximately $400,000 per year. Water loss in the system can be caused by any number of issues including actual water loss caused by leaking mains or water main breaks, unauthorized use or old/inaccurate meters.

- Village to increase water rates to build a cash reserve in the water fund.
- The water fund cash balance should be maintained around $3,000,000 at all times as a back up to $9 to 11 million of annual system expenses over the next 5 years and to build a reserve for future capital expenses.

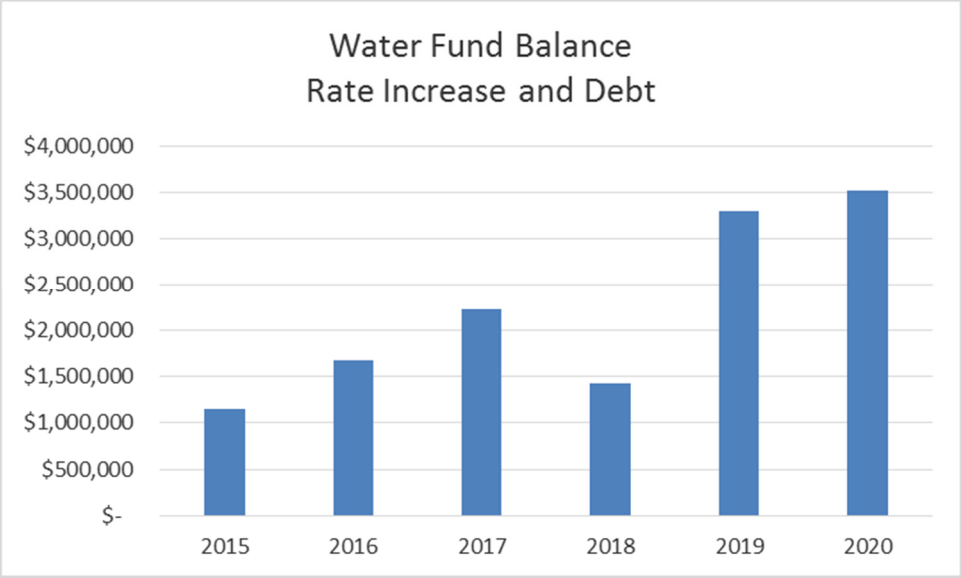
The recommended water rates are:

Year	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Annual increase		**10%**	**10%**	**7%**	**7%**	**7%**
Fixed Charge - $/customer/month	7.33	10.00	10.00	10.00	10.00	10.00
Metered Charge within corporate limits - $/1000 gal	7.73	8.50	9.35	10.01	10.71	11.46
Metered Charge outside corporate limits - $/1000 gal	9.13	10.04	11.05	11.82	12.65	13.53

The graph below shows the comparison of recommended 2016 Village rates with 2015 rates of other municipalities in DuPage County which purchase Lake Michigan water from the DWC. Both in-town and out-of-town rates are shown. (Source: DuPage Water Commission)



The water fund cash balance based on the recommended rates and the expenses listed in this memo are shown in the chart below:



Under this scenario, the water fund will have a healthy cash balance, reserve for unforeseen expenditures and future capital expenses by year 2019.

Conclusions

- The current water rates and water fund cash balance are inadequate to maintain the water system financial health in the future.
- A 10% rate increase, followed by additional increases listed in this memo, are recommended to increase the cash balance in the water fund.
- The non-revenue water percentage has increased over the years to a significant amount. Current value of the non-revenue water is estimated to be approximately $1 million annually. Reducing this amount would produce substantial savings. Village should start with a desktop audit of loss and unaccounted for water. Based on the findings of the audit, specific water loss categories such as leaks, meter reading, billing etc. should be looked at in more detail.
- The capital program should provide for balanced capital expenditures for needed projects. The current program has significant expense in some years and no expense in others resulting in large changes to the water fund balance. It is recommended to update the 10 year capital program based on the current and anticipated needs of the water system.