



CITY OF OXFORD

**COMPREHENSIVE
WATER UTILITY
OPERATIONS STUDY**

May 24, 2004

Contents

Tab 1. City Manager Report

Tab 2. Service Director Report

- Recent Capital Improvements
- Operations
- Capital Project requirements
- Observations

Tab 3. Finance Director Reports

- Water Utility Operations
- Financial History
- Projected Financial Trends
- Future Trends

Tab 4. Projected water fund financials

TAB 1

Memorandum

To: Mayor Conley and Members of Council

From: Jane Howington

Date: 5/27/2004

Re: WATER FUND - Recommended Rate Adjustments

This report provides a detailed analysis and review of the City's water fund. The purpose is to provide Council with information on the history, trends and management of said water fund and, as a result, what condition the fund is in and where staff projects it is going. Finally, the report provides recommendations on potential solutions relative to the funds projected condition.

The water fund has not had a rate increase since 1990. Costs to operate the water system have increased while revenues have not. User growth has been minimal. These statements are explained more fully in the attached reports from Tom Peterson and Mike Dreisbach.

Planning for the long term health of a fund such as the water fund is a complex task which requires consideration of many variables. Assumptions must be based on past trends while solutions must look at forecasting weather patterns, growth patterns, infrastructure life patterns, and economic indicators.

With all this in mind, three scenarios are being presented herein. All three provide an estimated long term financial viability methodology for the fund, a conservative cost containment program, a rebuilding program for the capital program and a minimal rate adjustment of 1.5% every two

years. The difference in these three scenarios is reflected in the projected revenue stream. The "best case" scenario estimates future revenues to remain level with the 2003 revenues. The "most likely" scenario estimates future revenues to drop 4.5% in 2004 and remain at that level. The "worst case" scenario anticipates an 11.5% reduction in revenue based on 2003 levels.

Spreadsheets showing the financial trends using the three 3) identified scenarios follow this correspondence.

After careful study, it is my recommendation to follow the "most likely" scenario and implement an 8% water rate adjustment in the last quarter of 2004. Continued cost containment measures coupled with careful management of the water capital budget and the 8% increase should re-instate the viability of the water fund provided water sales remain within the estimated 1-5% reduction level. The proposed schedule for ongoing rate adjustments is intended to maintain the fund viability through 2014 unless unanticipated major changes occur.

Two additional tables are provided herein.

The first provides a comprehensive schedule for review and planned rate adjustments to all infrastructure fees. The purpose for putting this schedule together is to provide Council with a planning tool in a similar manner as the CIP provides advance knowledge of upcoming financial impacts.

The second table provides information on the impact of the proposed rate adjustments to users of the Oxford water system.

Utility Rate Plan

<u>Year</u>	<u>Water</u>	<u>Sewer</u>	<u>Refuse</u>	<u>Other*</u>
2004	8%			
2005			new contract	
2006	1.5%			
2007		1.5%		
2008	1.5%			
2009			new contract	
2010	1.5%			
2011		1.5%		
2012	1.5%			
2013			new contract	
2014	1.5%			
2015		1.5%		

*Other includes potential future user fee assessments such as storm water or lighting.

ANALYSIS OF WATER RATE OPTIONS

	CURRENT RATES	OPTIONAL RATE INCREASES		
		6%	8%	10%
Base rate	7.63	8.09	8.24	8.39
Volume rate per 100 cu ft	2.09	2.22	2.26	2.30

ILLUSTRATION OF IMPACT TO A MONTHLY WATER BILL

Type of Unit	Average Usage 100 cu ft	Cost Now	6% Increase	8% Increase	10% Increase
Residential					
2	8	24.35	1.50	1.95	2.44
4	16	41.07	2.54	3.29	4.11
6	24	57.79	3.58	4.62	5.78
Apartment					
Small Complex	48	107.95	6.70	8.64	10.80
Large Complex	660	1,387.03	86.26	110.96	138.70
Fast Food	68	149.75	9.30	11.98	14.98
Restaurant					
Small	36	82.87	5.14	6.63	8.29
Large	167	356.66	22.17	28.53	35.67
Miami University May 1 2004 Bill		70,483.75	4,229.03	5,638.70	7,048.38

TAB 2



Memo

Service Department

513/524-5206 fax 513/524-5267

TO: Jane Howington, City Manager

FROM: Michael Dreisbach, Service Director

CC: Tom Peterson, Finance Director
Richard Dils, Deputy Service Director
David Weihrauch, Water Plant Manager
Scott Flanigan, Water Distribution Manager
Faye Harsh, Utility Billing and Collections Supervisor

RE: **Water Fund Report (Update)**

DATE: May 15, 2004

The City Manager's Office and the Finance Department have requested input from the Service Department as to current operational efficiencies and future capital project requirements for the Oxford municipal water system.

RECENT CAPITAL IMPROVEMENTS

Beginning in the late 1990's, the City began an aggressive capital improvement program that targeted long term improvements in all areas of the Utility from raw water

production, to reservoir improvements, to adequate emergency power generation. Highlights from this program include the following:

- 1998 Emergency power generator installed for the West Booster Station and Reservoirs
- 1999 Radial collector well # 1 was rehabilitated with new laterals and screens drastically increasing raw water production
- 1999 Elevated storage reservoir was rehabilitated both inside and out with new coatings and anti-corrosion systems
- 2000 The two million ground reservoir was rehabilitated both inside and out with new coatings and anti-corrosion systems.
- 2000 12" water main was installed along the entire N27 corridor to Ringwood Rd. New 16" water main was installed from West Booster Station to Fairfield Road, to the Community Park, to Brookville Road. May soon become loop feeder for southern quads of City.
- 2000 Tallawanda Road water main was replaced from High St to Bonham Road in conjunction with Miami University improvements.
- 2000 Emergency power generator installed at the highest producing well (PW#1)
 - "Year 2000 Issues" pass without significant incident.

While improvements have proceeded at a significant pace, all of the short term goals established in the 1998 five year plan have come to fruition. While we continue to list projects on proposed Capital Improvement Plans, most listings are classified as Priority #2 or #3.

OPERATIONS

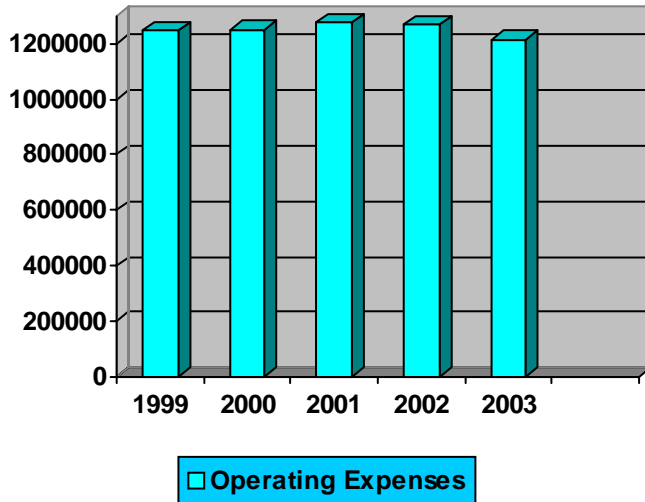
Water division operations have been thoroughly studied over the past few years in preparation of annual operating budget requests. Possible savings in direct costs such as electricity and chemical purchases have already been achieved with an aggressively monitored program administered by the plant manager. Personnel costs have been adjusted through the RMS Compensation Study in an effort to match salaries with actual market conditions.

The system is fortunate to have been modernized in the early 1990's with a new treatment plant and wellfield development. This plant (and its operators) is extremely efficient and effective in producing quality potable water. Many other cities, faced with having to build new facilities, are now looking at huge rate increases to cover their costs. In hindsight, had Oxford been implementing small inflationary adjustments over the last few years, a larger increase would likely not be necessary today.

The City's utility meter modernization program is nearing completion. We are confident that usage is being billed and collected properly. Capital expenses for this program will begin declining by \$10,000 a year beginning in 2005.

As the plant manager depicts in the following water pumping trend graph, production has been virtually flat over the past decade. The Fund should not rely upon increased production for increased revenues. However, it should be noted that additional housing units are being planned at Miami University and possible economic development opportunities may come to fruition leading to noticeable water revenue increases.

Operating costs for 2003 are 2.68% LOWER than operating costs in 1999.



CAPITAL PROJECT REQUIREMENTS

The Service Department has submitted a relatively conservative CIP request to the City Manager and Council for the period 2004 – 2008. The complete listing is printed in Finance’s master study document, but basically provides for developing / protecting additional raw water resources, replacing worn out equipment and vehicles, protection of the well fields used by the system, modernization of the metering system, generation of emergency power for utility self sufficiency, and distribution main replacements.

Items and projects listed are necessary for a modern and efficient utility. Not all lower priority projects are listed in the CIP plans, such as replacing 100 year old water mains that are still in viable and usable condition. Unless absolutely necessary, the cost would be prohibitive.

OBSERVATIONS

The City has done a very good job of bringing storage and production facilities to the highest standard possible. Both storage tanks have been rehabilitated, both interior and

exterior, and should not need significant maintenance for the next 15 years. Raw water resources have been redeveloped and are actually more readily available today than just four years ago. These local resources are also much more cost effective to utilize than the more distant Seven-Mile Valley resources.

We should remain cognizant of “the Postal Effect” whereby increased prices may ultimately lead to a reduction in sales and lower income.

USA Today reports that consumption trends nationwide indicate consumers are very conservation oriented. Water pumped nationally is no higher today than in the mid 1970’s even though the population is much greater.

There are not significant revenue opportunities in the surrounding rural region. Rates for Oxford’s water are disproportionately high because of system isolation and the relative scarcity of available groundwater resources in the Four Mile Valley (Oxford). The City’s system is virtually surrounded by Southwest Regional Water District, which is very protective of its customer base.

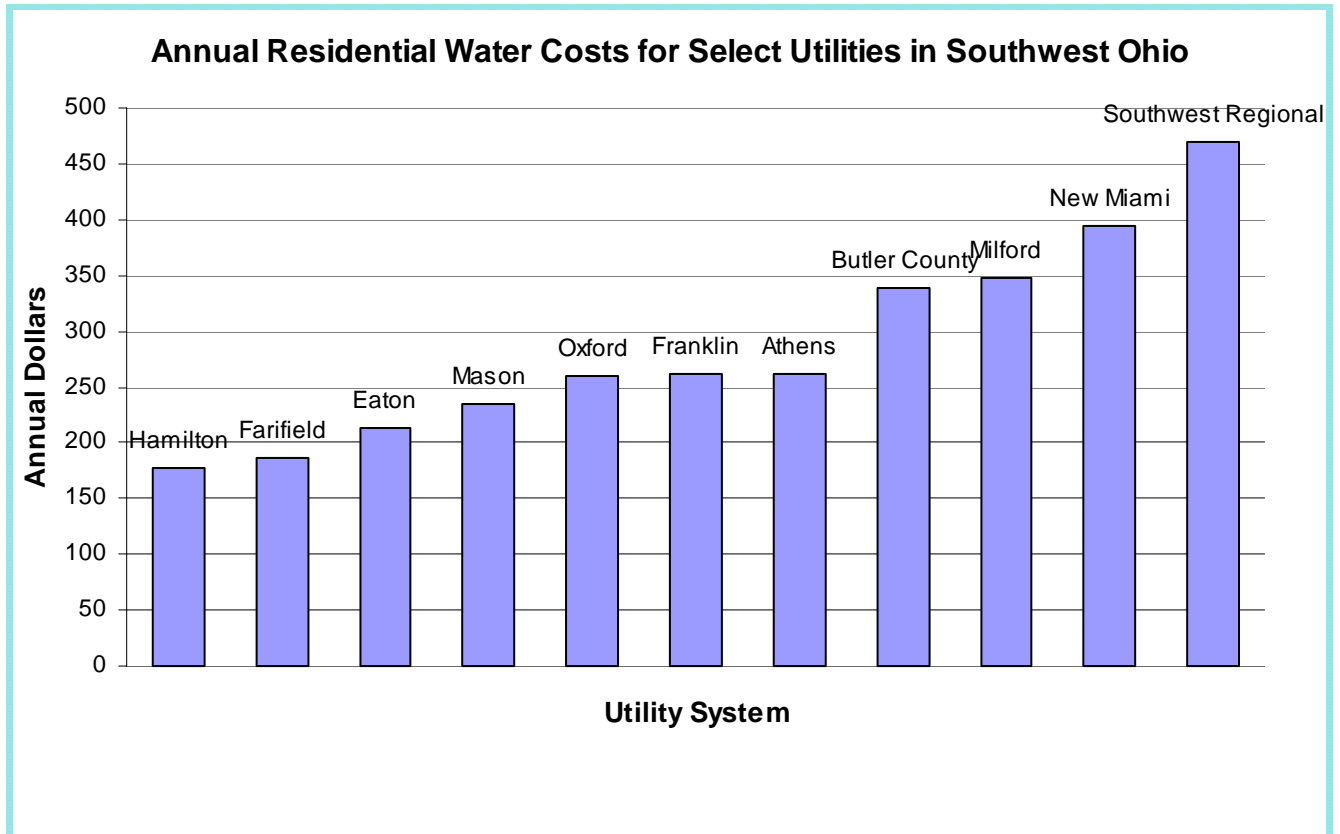
A tremendous amount of time, effort, and expenses are used for the seasonal opening and closing of accounts by transitioning students of Miami University living off campus. Approximately 3300 account signature cards are being changed each year causing significant administrative expenses. Fees to cover these expenses have been implemented to pay for these costs. Staff will continue to spend additional time studying other possible revenue resources or possible expenditure cuts.

The City examined costs allocated to the Water Fund to verify they are representative of actual costs. The City has reassigned 50% of the costs for the utility meter change-out program to the Wastewater Fund as these meters act as the “cash registers” for the fund.

The Finance Director recently refinanced the Water Plant and Well debt for more favorable interest rates, thereby cutting debt service costs for the Utility.

Select utility water rates based on the 2004 Englewood survey and other data:

- **Based on 1000 cubic feet usage per month**
- **Not including Wastewater utility charges**



Note: Butler County DES has tiered rates. The higher the usage – the **greater** the rate.
 Hamilton rates **decline** with greater usage above threshold limits.

TAB 3

TO: CITY COUNCIL MEMBERS, JANE HOWINGTON, CITY MANAGER
FROM: TOM PETERSON, FINANCE DIRECTOR
DATE: APRIL 19, 2004

RE: Water Utility Operations:

- **Financial history**
- **Projected financial trends**
- **Future trends**

HOW THIS MEMO IS ORGANIZED

In short, the memo will provide an explanation of where the Water fund is financially, how it got to this point, and where it might be headed.

The Water fund has not had a rate increase since 1990. Expenses have increased since 1990, (except for 2002 and 2003 where cost restraint has reduced expenses). Revenues have decreased since 1998. As a result, the water fund's financial outlook is not good. In fact, this memo makes some strong statements about the negative future financial outlook for the Water fund. The memo goes into some detail to provide the hard numbers to back up the case. Providing details on financial matters can make a memo a bit harder to read, but in order to make the case of where we stand financially, we must cite specific financial data. So the memo will require a bit a patience when reading it. The memo has three sections:

Section I. – Background
Section II - Financial History
Section III - Future trends

Section I. – Background. This section provides brief background information that necessary for a better understanding of the two sections that follow.

Section II - Financial History. Our analysis of financial history will begin with year 1998 as our base year. This is because financial trends since 1998 are more relevant to our current financial condition. 1998 is also a very pivotal year: While Water revenues increased from 1990 to 1998, they peaked in 1998 and have declined since then. Therefore, this five-year trend (through 2003) of declining revenues is at the core of our issues, and critical to gaining an understanding of the problem. Separate financial history sections will address:

- A. Revenues trends
- B. Expense trends

C. Revenues when compared to expenses

It is also important to note that these sections use graphs to display a visual picture, which increases understanding. But a graph cannot provide an accurate measurement of amounts.

Therefore, tables are also provided for us to understand actual amounts and percentages.

Section III - Future trends. This section provides a projection of where revenues and expenses might be over the next 3 years. This provides a simple ‘What If...’ illustration of where we might be by 2007 just to give us an initial understanding, as a starting point. Then it’s up to decision makers to determine what actions should be taken where possible, to direct our destiny.

I. BACKGROUND

During the 1980’s the City faced a shortfall in raw water supply. As a result, in 1988, the City borrowed a little under \$14,000,000 to build water wells at Seven Mile, and a new water plant to increase production capacity. To finance the expansion, the City issued bonds for about \$14M. The 1998 bonds were refinanced in 1992 to obtain a lower interest rate.

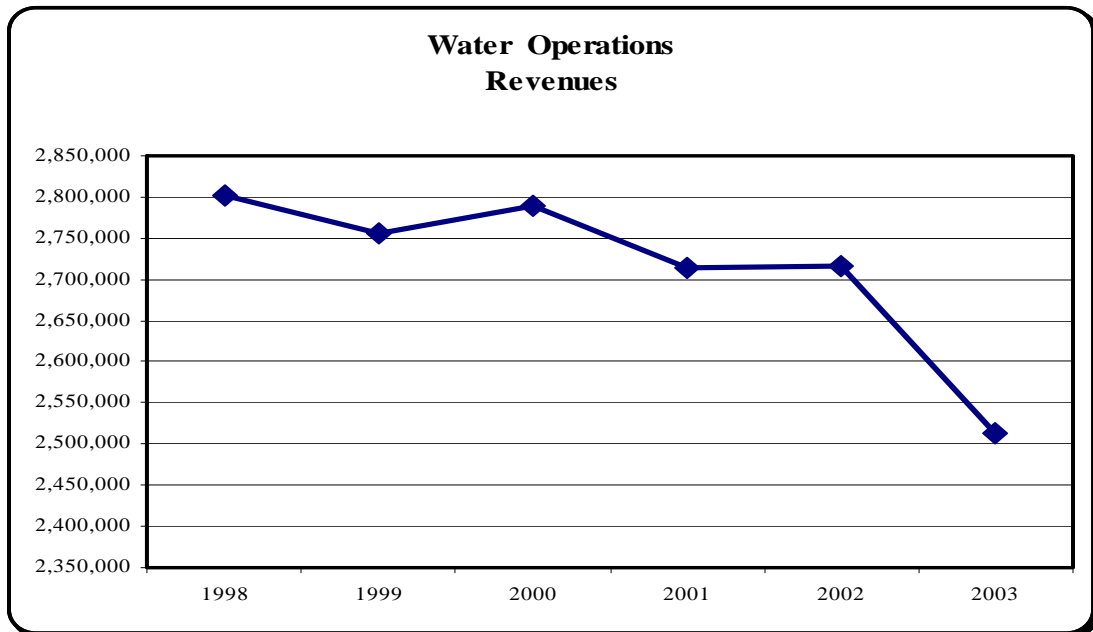
In 2002 we called the 1992 refinanced bonds and issued \$9M of new bonds to further reduce the rate to 4.32%. The new bonds will be fully paid in year 2014, the same time frame as the old bonds. The 2002 refinancing reduced the annual debt payment from \$1,198,000 to approximately \$943,000 reducing the total payment by about \$255,000. But note that a portion of the former payment was funded with interest earnings on the escrow that was required to be maintained under the former revenue bond. This reduced the payment, net of the interest earnings, to \$1,138,000. Therefore the overall net savings from refinancing in 2002 was about \$195,000 (\$1,138,000- \$943,000).

The water rates were increased in June 1990 in order to pay the new annual bond payment, to fund the increased operating costs for pumping the water from Seven Mile, and to operate the new plant. The water rates have not been changed for 14 years. Water sales revenue, after peaking in 1998, has decreased since then. Over the same 14-year period, in general, costs have increased. The result has been that the original extra revenue remaining after paying expenses and debt has been gradually eroded since the early 1990s by cost increases and revenue decreases.

II. FINANCIAL HISTORY

A. REVENUE TRENDS

	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>
Revenues	2,802,585	2,756,073	2,789,694	2,713,773	2,715,474	2,513,009
Annual change		-46,512	33,621	-75,921	1,701	-202,465
Annual percentage		-1.7%	1.2%	-2.7%	0.1%	-7.5%
Cumulative decrease		-46,512	-12,891	-88,812	-87,111	-289,576
					Cumulative percentage	-10.3
					Total decrease 2002-2003	-5.7%
					Average annual decrease 2002-2003	-2.85%



- We have experienced a trend of decreasing water revenue in the 5 years after the base year of 1998.
- The decline began following 1998. The City, to pay for \$9M of OEPA-mandated sewer improvements, more than doubled the sewer rate in March, 1997. Therefore, the decline in water usage (hence revenues) could be partially the result of the sewer rate increase.
- Revenues have decreased \$289,000 (10.3%) in the 5 years after 1998, thru the 2003.

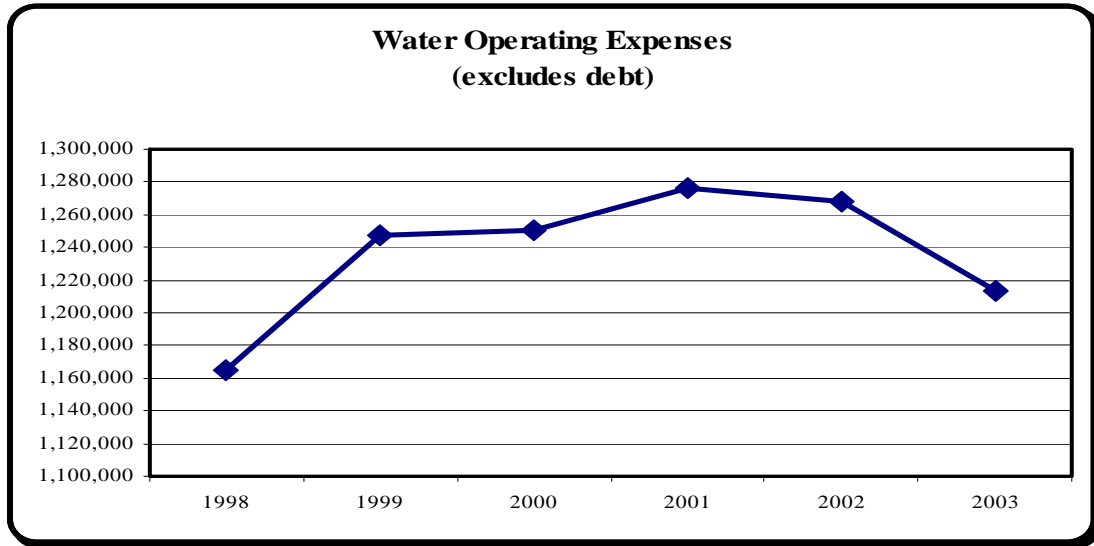
- The majority of this decline has been a result of conservation measures implemented by Miami University, resulting in significant decreases in their water usage, hence our revenues (more on this later in the memo).

SUMMARY:

- **We have been budgeting either a 1% increase, or zero increase in water revenues, for the past five years. But in actuality, we have experienced a five-year trend of declining water revenues, despite the moderate economic development growth that has occurred in the last five years in Oxford.**
- **While one would have thought that with economic growth, including two new hotels, we would have at least resulted in no decrease, and possibly an increase in water revenues. But we have indeed had a decrease.**
- **Therefore, the lesson of declining revenue of the last five years is that we can no longer just ‘assume’ revenues will increase because we think we will have future economic growth. Until we are certain of specific known major growth requiring greater use of water, we should plan no more than zero growth in revenues in the future, and possibly continued decreased revenues. We’ll need to adopt the position ‘don’t count on it until we are certain we’re gonna get it’.**

B. EXPENSE TRENDS

	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>
Operating expenses	1,164,647	1,247,198	1,251,003	1,276,229	1,267,976	1,213,774
Annual change		82,551	3,805	25,226	-8,253	-54,202
Annual percentage increase		7.1%	0.3%	2.0%	-0.6%	-4.3%
Cumulative increase		82,551	86,356	111,582	103,329	49,127
				Cumulative percentage		4.2%
				Total decrease 2002 -2003		-4.9%
				Average decrease 2002-2003		-2.45%



Additional notes regarding costs:

- Operating Costs (excluding debt) have increased \$49,127, 4.2%, after the base year of 1998.
- In the two years since 2001 operating costs have decreased \$62,000, 4.89%. This has been the result of conscious retrenchment of expenditures. Additionally, costs were lower in 2003 because we had a vacancy for a period of time, with the position being combined with an engineering position so that the water fund is charged for only 50% of actual costs in 2003.

SUMMARY:

- **Costs have decreased in the last 2 years, reversing a trend of increases.**
- **We cannot expect to maintain a cap on future cost growth for an extended number of years; Costs will eventually begin rising, now that much of the easier cost cuts has been instituted.**

A. REVENUES COMPARED TO EXPENSES

- Note that the large decrease in expenses in 2003 was also the result of the 1992 water bond refinancing that yielded a net \$195,000 decrease in payment.
- **Since late 2000, because we anticipated we would obtain a major decrease in costs by refinancing our debt (\$195,000) at the 10-year call date, we have felt it has not been appropriate to request a rate increase in the last few years.**

The following is an analysis of the change in revenues, expenses and debt since 1998.

	1998 Actual	2003 Actual	\$ Change	% Change	Annual %
Revenues	2,802,585	2,513,009	-289,576	-10.3%	-2.0%
Operating expenses	1,164,647	1,213,774	49,127	4.2%	0.8%
Debt	<u>1,138,000</u>	<u>943,000</u>	<u>-195,000</u>	-17.1%	-3.4%
Remainder, for transfer to capital funds	499,938	356,235	143,703	-28.7%	-5.7%

In the five years after 1998:

- **Revenues** have **decreased 10.3%** in total, **2%** per year.
- **Operating expenses** have increased **4.2%, 0.8%** per year.
- The 2002 debt refinancing cut debt payments \$195k.
- **While the amount of cost increase is low -\$49,127 (4.2%), during the same 5 years, revenues decreased \$289,576 (10.3%).**
- **The net ‘profit’ remaining, to be transferred to capital funds** for future capital projects, has decreased by **\$143,703** from **\$499,938** to **\$356,235**.

III. FUTURE TRENDS

The purpose of this section is to provide an initial “What if”, where finances could be in the next few years. This is a very quick and introductory illustration. Accompanying memos will go into greater detail regarding City financial strategies for short-term and long-term fiscal management of the Water fund. Additionally, Miami University Graduate Accounting Students are preparing a Financial Forecast for years 2005-2007 to be issued by the end of April. The financial forecast will provide greater detail of potential financial condition of the water fund.

The chart presumes **revenues stay the same, using today’s most recent forecast for 2004** – no increase or decrease. It projects **expenses to increase at 2% per year**. The chart attempts to show a middle of the road projection: **Should actual revenues and expenses be higher or lower, the final outcome will differ**. It simply illustrates one possible financial scenario, before management takes any action.

CHART ASSUMPTIONS

REVENUES

In addition to the 2004 budgeted revenue being shown in the chart, a figure representing 2004 revised amount is also shown. It reflects the following two changes from the original budget:

2,618,600 **Original 2004 revenue budget** (which was based on 2003 'projected' revenue as calculated last fall during budget preparations).

(105,000) 2003's actual revenues were \$105,000 less than budget 2004. We deduct this difference to bring the 2004 budget down to the level of actual 2003 revenue.

(64,000) An additional 2.5% decrease from 2003's actual revenues. This reflects our actual first quarter 2004 billing decrease from 2003. This projects to about a \$64,000 decrease, annualized. We are reflecting this decrease to be conservative because in past years we have presumed decreases would not occur, and have been wrong. (Most of the 2004 decrease is for the MU water meter accounts – a 4.15% drop. This is in addition to a decrease for MU accounts of 9% (\$67,000) in 2003, vs 2002.)

2,449,600 **Revised 2004 water revenue forecast.**

CHART EXPLANATIONS

Revenues

Why does the revenue line increase in 2004 budget, and decrease for 2004 revised?

This question is answered on the preceding page under the heading 'Revenues'.

Expenses

Why is there a sudden increase in costs from 2003 actual to 2004 Budget?

This is because:

- First, we conservatively budget the high end of expenses.
- Second we generally restrict actual expenses and finish well below the budget.

The 2003 costs came in lower because of our management restraint, but for conservative reasons we budgeted 2004 as we always have toward the high end of costs, because we may not always be successful in cutting actual costs below expected budget.

CONCLUSION

This chart provides an illustration of one scenario, where revenues do not change and costs increase at 2% a year, we will spend all we take in and have no funds generated annually for capital reinvestment. Because historical data reflects a trend of lower revenue and higher costs, if future revenues are lower, and/or expenses higher, expenses could exceed revenues.

TAB 4

See PDF attachment

MOST LIKELY SCENARIO

PROJECTED WATER FUND FINANCIALS

OPERATING EXP **2004 4th Qtr** **8.0%**
 every 2 yrs beginning 2006 **1.5%**
 every 2 yrs beginning 2007 **2.0%**

	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
REVENUE																
Actual	2,798,694	2,713,773	2,715,474	2,513,009												
Projected 2004 and beyond					2,400,000	2,640,000	2,640,000	2,679,600	2,679,600	2,719,794	2,719,794	2,760,591	2,760,591	2,802,000	2,802,000	2,844,030
Increase:																
2004 4th Q	8.0%				48,000											
every 2 yrs beg 06	1.5%						39,600		40,194		40,797		41,409		42,030	
TOTAL REVENUE	2,798,694	2,713,773	2,715,474	2,513,009	2,448,000	2,640,000	2,679,600	2,679,600	2,719,794	2,719,794	2,760,591	2,760,591	2,802,000	2,802,000	2,844,030	2,844,030
EXPENDITURES																
Debt	1,138,000	1,138,000	1,130,000	940,000	940,000	940,000	940,000	940,000	940,000	940,000	940,000	940,000	940,000	940,000	940,000	940,000
Operating																
Actual	1,251,003	1,276,229	1,267,976	1,213,774												
Budget 2004					1,431,099	1,431,099	1,431,099	1,431,099	1,459,721	1,459,721	1,488,915	1,488,915	1,518,694	1,542,467	1,573,316	1,573,317
Increase 2%	2.0%							28,622		29,194		29,778		30,849		31,466
every 2 yrs beg 07																
Total Operating Exp	1,251,003	1,276,229	1,267,976	1,213,774	1,431,099	1,431,099	1,431,099	1,459,721	1,459,721	1,488,915	1,488,915	1,518,694	1,518,694	1,573,316	1,573,316	1,604,783
Capital	550,000	550,000	300,000	190,000	225,000	270,000	117,250	103,750	194,250	250,000	300,000	350,000	400,000	400,000	400,000	400,000
TOTAL DEBT, OPER & CAPITAL	2,939,003	2,964,229	2,697,976	2,343,774	2,596,099	2,641,099	2,488,349	2,503,471	2,593,971	2,678,915	2,728,915	2,808,694	2,858,694	2,913,316	2,913,316	1,604,783
Carry-over					169,235	21,136	20,037	211,288	387,417	513,240	554,119	585,794	537,691	480,997	369,681	300,394
Net remaining	(140,309)	(250,456)	17,498	169,235	21,136	20,037	211,288	387,417	513,240	554,119	585,794	537,691	480,997	369,681	300,394	1,539,641

FUTURE LARGE \$\$\$ ITEMS TO CONSIDER BY 2020

- <100,000 Change to liquid hypochlorite from gaseous chlorine
- 1,000,000 Storage tank rehabilitation in ~ 2020 (2)
- 1,500,000 Additional storage capacity in future