APPENDIX J

2004 REPORT ON THE FINDINGS RELATING TO POSSIBLE ACQUISITION ON THE CITY OF MILAN WATER TREATMENT PLANT BY BURNS & McDONNELL

Report on the Findings Relating to Possible Acquisition of the City of Milan Water Treatment Plant

prepared for

The North Central Missouri Regional Water Commission

2004
33880

Mission Statement
"The Mission of the Commission is to provide an abundant source of low-cost, pure, quality water for the residents of North Central Missouri."

Burns & McDonnell
SINCE 1898

January 16, 2004

Mr. Don Summers
North Central Missouri Regional Water Commission
P.O. Box 266
Unionville, Missouri 63565

Final Letter Report Pertaining to Findings Relating to Possible Acquisition of the City of Milan Water Treatment Plant

Dear Mr. Summers:

Burns & McDonnell is pleased to present our final letter report summarizing findings relating to the possible acquisition of the City of Milan Water Treatment Plant (the Plant). This report has been completed in accordance with the scope of services included in our proposed services dated May 12, 2003. Burns & McDonnell's understanding on this assignment has been that the North Central Missouri Regional Water Commission (the Commission) wishes to consider purchasing the Plant and leasing the current source of raw water to the Plant. This study has been completed as a supplement to the Burns & McDonnell feasibility study/master plan contract, since the purchase of the Plant was not anticipated in the scope for the feasibility project.

Scope of Work

Burns & McDonnell completed a step-by-step approach in addressing the issues associated with the possible acquisition of the Plant by the Commission. This approach includes the following steps:

1. Determine what facilities to include in the possible acquisition.
2. Determine possible ancillary facilities that may be necessary to either acquire or lease.
3. Determine operation and maintenance expenses associated with operating the Plant.
4. Determine expected unit cost for water if the Commission purchases the Plant.
5. Prepare an overview analysis of potential financing sources for the facilities acquisition.
6. Prepare a letter report summarizing the analysis completed in the previous steps and providing recommendations for consideration by the Commission.

A discussion of the analysis completed for each of the above six steps is provided in the following paragraphs.

Determination of Facilities Included in the Possible Acquisition

Burns & McDonnell met with the Commission at the beginning of the study to discuss what facilities to include in the analysis of the possible acquisition of the Plant. It was determined that in addition to the Plant, the supplemental pipeline and intake facility would need to be included in any purchase. Capital costs for both the Plant and these additional facilities have been estimated. Included in the estimate of the Plant cost are certain costs associated with an arbitration award involving the Plant and paid by the City of Milan. Total capital expenditures associated with the possible purchase are summarized in Table A.

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Table A
Capital Expenditures Associated with Plant Purchase

Capital Item	Cost
Milan Water Treatment Plant	$3,564,500
Arbitration Award Included	482,200
Supplemental Pipeline and Intake	1,136,000
Total Plant Purchase Price	$5,182,700

Six different scenarios were developed to analyze the possible unit costs for raw and treated water. The scenarios were developed assuming two different forecast levels of water sales – with and without sales to a new Milan industrial user. These levels of water sales were then used to develop unit costs under three separate assumptions. Under the first assumption, no grant funding was expected to be available to finance the Plant purchase. Under the second assumption, grant funding of 30 percent of the Plant acquisition costs was expected to be available to finance the Plant purchase. Under the third assumption, grant funding of 50 percent of the Plant acquisition costs was expected to be available to finance the Plant purchase. Under each of the scenarios, the remaining portion of the Plant acquisition costs not covered by grants and the additional capital requirements are assumed to be financed through the issuance of debt. The debt is assumed to have a term of 25 years with an interest rate of 4.75 percent. The six different scenarios for which details are provided in Appendices A through F are:

Appendix A: Scenario 1 – No Milan Industrial User, No Grants
Appendix B: Scenario 2 – No Milan Industrial User, With 30% Plant Grant
Appendix C: Scenario 3 – No Milan Industrial User, With 50% Plant Grant
Appendix D: Scenario 4 – With Milan Industrial User, No Grants
Appendix E: Scenario 5 – With Milan Industrial User, With 30% Plant Grant
Appendix F: Scenario 6 – With Milan Industrial User, With 50% Plant Grant

The Plant will be owned, operated, and maintained by the Commission. Burns & McDonnell has estimated operation and maintenance costs for the Plant based on information provided by the City of Milan pertaining to the current operation of the Plant. The detailed tables prepared for each of the scenarios are:

Table 1 – Projected Water Costs
Table 2 – Inputs and Assumptions
Table 3 – Forecast of Operation and Maintenance Expenses
Table 4 – Forecast Energy Expenses
Table 5 – Projected Debt Expense
Table 6 – Projected Water Sales

Key Inputs for the Analysis

To develop the estimates pertaining to unit costs associated with raw water from the reservoir and treated water from the Plant, Burns & McDonnell made certain assumptions. The first assumption was that the Plant will be acquired and operated by the Commission. Total costs for the Plant and the supplemental pipeline and intake structure were estimated at $5,182,700. Table B provides a summary of the key inputs and assumptions pertaining to the Plant purchase and construction costs. Table 2 provides the specific assumptions for each of the scenarios. A portion of the costs for the acquisition of the Plant may be offset by grants. The Commission is currently exploring various grant opportunities.

Table B
Summary of Key Inputs and Assumptions

Starting Year	2004
Water Plant Capital	
Milan Plant Purchase Capital Requirement	$3,564,500
Milan Plant Purchase Additional Capital	$482,200
Milan Plant Purchase Grant Funding	$1,214,010 [1]
Milan Plant Purchase Capital less Grants	$2,832,690
Supplemental Pipeline & Intake Capital Requirement	$1,136,000
Pipeline & Intake Grant Funding	$0
Pipeline & Intake Capital less Grants	$1,136,000
Interest Rate for Debt Financing	4.75%
Term of Project Financing - years	25
Plant O&M	
Inflation Rate for Labor/Materials	4.0%
Inflation Rate for Energy	2.5%
Energy Unit Cost ($/kWh)	$0.0690
Average Monthly Energy Use (kWh)	55,000
Demand Charge ($/kW)	$206
Average Demand (kW)	8.50
Other Utility Costs (Gas?)	20,000
Plant Labor	$109,100
City Labor Offset (10%)	-$10,900
Routine Maintenance (1% of Plant Capital)	$35,600
Chemical Costs per Thousand Gallons	$0.275
General and Administration Expenses	$125,000
Lake Lease per Thousand Gallons	$0.150
Renewal & Replacement Fund Requirement	$20,000
Water Usage	
Milan Treated Water	0.350 [2]
Sullivan County #1 Treated Water	0.328 [2]
Green City Treated Water	0.094 [2]
Milan Industrial User Treated Water	0.363 [2] [3]
Other Treated Water Customers (Begin 2011)	0.490
PSF Raw Water	0.725 [2]
Milan Water Usage Growth	0.70%
Sullivan County #1 Water Usage Growth	1.30%
Green City Water Usage Growth	0.25%
Raw Water Usage Growth (first 10 years)	6.00%
Raw Water Usage Growth (after 2010)	0.00%
Milan Industrial User Water Usage Growth	6.00%
Milan Industrial User Water Usage Growth (after 2010)	0.00%
Other Treated Water Growth	5.00%
Return	
Return (% of O&M expense, Years 1-5)	5%
Return (% of O&M expense, Years10 and beyond)	10%

[1] Amount shown is 30 percent. Analysis also prepared assuming no grant funding and grant funding of $2,023,350, or 50 percent.
[2] 2002 Average MGD.
[3] Analysis also prepared assuming no sales to the Milan Industrial User.

Determination of Ancillary Facilities to Lease

Burns & McDonnell and the Commission discussed the issue of other ancillary facilities that may be necessary to operate the Plant. A determination was made that it would be necessary to have a lease with the City of Milan for raw water supply from Elmwood Lake. This lease will be in effect until such time that the Commission has water available from the reservoir that will be created with the construction of a dam. The construction of the dam is discussed in the Water System Master Plan prepared for the Commission by Burns & McDonnell. The final report providing the Water System Master Plan was submitted to the Commission November 19, 2003.

For this analysis, Burns & McDonnell assumed a lease will be necessary for a five-year period. This lease will need to include provisions for pumping water from the two emergency raw water sources into Elmwood Lake. Burns & McDonnell estimated the cost for the lease based on a rate of $0.15 per 1,000 gallons of water taken from Elmwood Lake by the Commission. This lease amount is included as an operation and maintenance expense in the analysis completed. In lieu of the Commission paying the City of Milan a lease payment, the City will receive a discount on water purchases.

Determination of Plant Operation and Maintenance Expenses

Next, Burns & McDonnell determined operation and maintenance expenses for operating the Plant. The first step in this determination was to look at historical costs experienced by the City of Milan in operating the Plant. The City provided basic operating cost information to Burns & McDonnell. Utilizing this information and information in Burns & McDonnell data files pertaining to operation and maintenance expenses of similar facilities, a forecast of operation and maintenance expenses for the Plant was prepared. Included in the forecast is an amount for Commission general and administration expenses.

Table 3 in each of the appendices provides the forecast of plant operation and maintenance expenses, excluding energy expenses. Expenses associated with labor, utilities, routine maintenance, chemicals, and renewals and replacements are estimated. Also included in the estimate is an annual amount for a lease with the City of Milan for raw water supply from Elmwood Lake for the next five years. This will provide the Commission with a source of water until the dam is constructed and the reservoir is filled to a level necessary for proper operation. Annual operation and maintenance expenses associated with operation of the Plant are estimated to be slightly more than $500,000 in the initial year. Operation and maintenance expenses are estimated to increase from the initial year based on inflation of four percent annually for labor and materials and three percent annually for energy costs.

Energy costs are a major expense item associated with operating the Plant. Energy expense was forecast separately from other operation and maintenance expenses and was based on the current average energy charge per kilowatt-hour inflated at three percent per year. The average energy charge was determined based on the current rate charged to the City of Milan by North Central Electric Cooperative. This rate includes both demand and energy charge components. Projected energy costs were allocated to only the treated water sales. Premium Standard Farms (PSF), the City of Milan's raw water customer, pumps raw water directly from Elmwood Lake and, therefore, does not cause the Plant to incur energy costs associated with pumping the raw water. Projected energy expenses are provided in Table 4 in the appendices.

Determination of Financing Costs

For this analysis, Burns & McDonnell assumed the capital costs associated with purchasing the Plant and ancillary facilities would be paid for either through a combination of grants and revenue bonds or solely through the issuance of revenue bonds. Any bonds issued to finance acquisition costs are assumed to have a term of 25 years with an interest rate of 4.75 percent. Projected debt service is shown in Table 5 of the appendices.

Determination of Expected Water Unit Costs for Commission Owned Water Plant

Burns & McDonnell next prepared a forecast of expected sales from a Commission-operated Plant. Average daily water usage for the year 2002 was used as the starting point for the forecast of treated water sales to the City of Milan, Sullivan County #1, and Green City and raw water sales to PSF. Projected water sales to these customers are provided in Table 6 of the appendices. In scenarios 4 through 6, projected sales to a new Milan industrial user are included. Treated water sales were forecast to grow annually based on the growth rates for each customer shown in Table B. Raw water sales were forecast to grow at a rate of six percent annually.

It was recommended in the Feasibility Study previously completed by Burns & McDonnell, that the Commission purchase the Plant. Along with this recommendation, other action items were recommended to the Commission to be completed in the preliminary stages of the water supply project. The preliminary water unit costs presented in this report are based on the Commission completing the items listed below:

- Purchasing the Plant.
- Leasing the rights to take raw water out of Elmwood Lake from the City of Milan.
- Purchasing the new supplemental intake and pipeline from Locust Creek to Elmwood Lake.
- Providing treated water to the charter members of the Commission and local industries.

Table C provides a summary of the projected unit costs associated with the Commission owning, operating, and maintaining the Plant. Projected unit costs of water for each scenario are shown in Table 1 of the appendices. Based on the above stated criteria and projected sale of treated water to the charter members of the Commission, the unit costs for treated water will range from a high of approximately $2.60 per 1,000 gallons to a low of approximately $1.60 per 1,000 gallons of water purchased for the first five years of operation. The unit costs for raw water will range from a high of approximately $0.60 per 1,000 gallons to a low of approximately $0.51 per 1,000 gallons of water purchased for the first five years of operation. Over the succeeding ten years, unit costs will decrease as the Commission is able to add customers and increase sales of both raw and treated water.

Table C
Projected Water Costs for Milan Plant Purchase

Scenario	Year 1 – 5 Unit Cost for Water $/1,000 gallons	Year 6 – 10 Unit Cost for Water $/1,000 gallons
1 – No Milan Industrial User, No Grants	Treated – $2.6050 Raw – $0.5964	Treated – $2.0849 Raw – $0.3739
2 – No Milan Industrial User, With 30% Plant Grant	Treated – $2.3120 Raw – $0.5964	Treated – $1.8684 Raw – $0.3739
3 – No Milan Industrial User, With 50% Plant Grant	Treated – $2.1167 Raw – $0.5964	Treated – $1.7240 Raw – $0.3739
4 – With Milan Industrial User, No Grants	Treated – $1.9134 Raw – $0.5076	Treated – $1.2075 Raw – $0.2515
5 – With Milan Industrial User, With 30% Plant Grant	Treated – $1.7231 Raw – $0.5076	Treated – $1.1118 Raw – $0.2515
6 – With Milan Industrial User, With 50% Plant Grant	Treated – $1.5962 Raw – $0.5076	Treated – $1.0481 Raw – $0.2515

Analysis of Potential Financing Sources for the Facilities Acquisition

In preparing the analysis, Burns & McDonnell evaluated six scenarios as described previously. For any portion of the acquisition financed through revenue bonds the capital cost will be retired by a 25-year revenue bond with an interest rate of 4.75 percent. Burns & McDonnell recognizes that the Commission may be able to finance a portion of the Plant acquisition costs through various grants. If the Commission can obtain federal grant monies to apply to the acquisition, the cost of water from the Plant would be reduced. As an example, for every $1.0 million in grant money, the cost of treated water can be reduced by approximately $0.24 per 1,000 gallons. If half ($2,591,350) of the $5,182,700 can be funded by grant monies, the unit cost of treated water would be reduced from $1.9134 to $1.5962 per 1,000 gallons, assuming a Milan industrial user is also purchasing treated water. The Commission is encouraged to solicit for grant monies to assist in paying for the proposed acquisition.

Burns & McDonnell appreciates this opportunity to be of service to the Commission. Please feel free to contact Mr. Ted Kelly if you have any questions or comments regarding the information contained in this letter report or the analysis completed. Mr. Kelly can be reached at (816) 822-3208.

Sincerely,

BURNS & McDONNELL

David E. Christianson
Vice President, Management Services Group

Ted J. Kelly
Principal, Management Services Group

cc: Don Novak

DEC/TJK

Attachments

APPENDIX A
SCENARIO 1 – NO MILAN INDUSTRIAL USER, NO GRANTS

Appendix A
Scenario 1

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Treated Water O&M Cost Including Return	$408,700	$418,300	$428,100	$438,300	$448,700	$424,500	$420,300	$549,300	$571,300	$594,200
Treated Water Debt Service	$320,500	$319,600	$318,600	$317,600	$316,600	$315,700	$309,600	$318,700	$319,200	$319,700
Total Treated Water Costs	$729,200	$737,900	$746,700	$755,900	$765,300	$740,200	$729,900	$868,000	$890,500	$913,900
Treated Water Cost ($/1000 gallons)	$2.5878	$2.5961	$2.6044	$2.6137	$2.6232	$2.5151	$2.4585	$1.8141	$1.8168	$1.8198
Raw Water Cost O&M Cost Including Return	$122,200	$129,500	$137,300	$145,500	$154,200	$121,000	$143,100	$124,700	$127,600	$130,600
Raw Water Debt Service	$38,100	$39,000	$40,000	$41,000	$42,000	$42,900	$49,000	$39,900	$39,400	$38,900
Total Raw Water Costs	$160,300	$168,500	$177,300	$186,500	$196,200	$163,900	$192,100	$164,600	$167,000	$169,500
Raw Water Cost ($/1000 gallons)	$0.6058	$0.6007	$0.5963	$0.5917	$0.5873	$0.4628	$0.3898	$0.3340	$0.3389	$0.3440

Year 1 - 5 Average Water Cost	$/1000 gal
Treated Water Costs	$2.6050
Raw Water Costs	$0.5964

Year 6 - 10 Average Water Cost	$/1000 gal
Treated Water Costs	$2.0849
Raw Water Costs	$0.3739

No Milan Industrial User, No Grants
No Phase 1 & 2 Capital

Appendix A
Scenario 1

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water O&M Cost Including Return	$618,200	$643,300	$669,600	$697,200	$726,200	$756,700	$788,800	$822,300	$857,500	$894,400
Treated Water Debt Service	$320,200	$320,700	$321,200	$321,700	$322,200	$322,700	$323,200	$323,800	$324,300	$324,800
Total Treated Water Costs	$938,400	$964,000	$990,800	$1,018,900	$1,048,400	$1,079,400	$1,112,000	$1,146,100	$1,181,800	$1,219,200
Treated Water Cost ($/1000 gallons)	$1.8229	$1.8262	$1.8297	$1.8335	$1.8376	$1.8421	$1.8467	$1.8517	$1.8568	$1.8621
Raw Water Cost O&M Cost Including Return	$133,700	$136,700	$139,900	$143,100	$146,300	$149,600	$152,800	$156,200	$159,500	$162,900
Raw Water Debt Service	$38,400	$37,900	$37,400	$36,900	$36,400	$35,900	$35,400	$34,800	$34,300	$33,800
Total Raw Water Costs	$172,100	$174,600	$177,300	$180,000	$182,700	$185,500	$188,200	$191,000	$193,800	$196,700
Raw Water Cost ($/1000 gallons)	$0.3492	$0.3543	$0.3598	$0.3653	$0.3707	$0.3764	$0.3819	$0.3876	$0.3933	$0.3991

Year 11 - 15 Average Water Cost	$/1000 gal
Treated Water Costs	$1.8300
Raw Water Costs	$0.3599

Year 16 - 20 Average Water Cost	$/1000 gal
Treated Water Costs	$1.8519
Raw Water Costs	$0.3877

No Milan Industrial User, No Grants
No Phase 1 & 2 Capital

Appendix A
Scenario 1

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2024	2025	2026	2027	2028
Treated Water O&M Cost Including Return	$932,900	$973,500	$1,016,200	$1,061,100	$1,107,900
Treated Water Debt Service	$325,400	$326,000	$326,500	$327,100	$327,700
Total Treated Water Costs	$1,258,300	$1,299,500	$1,342,700	$1,388,200	$1,435,600
Treated Water Cost ($/1000 gallons)	$1.8674	$1.8732	$1.8791	$1.8855	$1.8916
Raw Water Cost O&M Cost Including Return	$166,300	$169,700	$173,100	$176,500	$180,000
Raw Water Debt Service	$33,200	$32,600	$32,100	$31,500	$30,900
Total Raw Water Costs	$199,500	$202,300	$205,200	$208,000	$210,900
Raw Water Cost ($/1000 gallons)	$0.4048	$0.4105	$0.4164	$0.4221	$0.4280

Year 21 - 25 Average Water Cost	$/1000 gal
Treated Water Costs	$1.8794
Raw Water Costs	$0.4164

No Milan Industrial User, No Grants
No Phase 1 & 2 Capital

Appendix A
Scenario 1

Table 2
North Central Missouri Regional Water Commission
Inputs and Assumptions

Starting Year	2004

Water Plant Capital

Milan Plant Purchase Capital Requirement	$3,564,500
Milan Plant Purchase Additional Capital	$482,200
Milan Plant Purchase Grant Funding	$0
Milan Plant Purchase Capital less Grants	$4,046,700

Supplemental Pipeline & Intake Capital Requirement	$1,136,000
Pipeline & Intake Grant Funding	$0
Pipeline & Intake Capital less Grants	$1,136,000

Interest Rate for Debt Financing	4.75%
Term of Project Financing - years	25

Phase 1 Capital

Investment Year	2005
Dam and Reservoir Construction Capital	$0
Dam Construction Grant Funding	$0
Dam Construction Capital less Grants	$0
Interest Rate for Debt Financing	5.00%
Term of Project Financing - years	25

Phase 2 Capital

Investment Year	2020
Dam and Reservoir Construction Capital	$0
Dam Construction Grant Funding	$0
Dam Construction Capital less Grants	$0
Interest Rate for Debt Financing	5.00%
Term of Project Financing - years	25

Plant O&M

Inflation Rate for Labor/Materials	4.0%
Inflation Rate for Energy	2.5%
Energy Unit Cost ($/kWh)	$0.0690
Average Monthly Energy Use (kWh)	55,000
Demand Charge ($/kW)	$206
Average Demand (kW)	8.50
Other Utility Costs (Gas?)	20,000
Plant Labor	$109,100
City Labor Offset (10%)	-$10,900
Routine Maintenance (1% of Plant Capital)	$35,600
Chemical Costs per Thousand Gallons	$0.275
General and Administration Expenses	$125,000
Lake Lease per Thousand Gallons	$0.150
Renewal & Replacement Fund Requirement	$20,000

Dam & Reservoir O&M

Phase 1	$0
Phase 2	$0

Water Usage

Milan Treated Water	0.350	[1]
Sullivan County #1 Treated Water	0.328	[1]
Green City Treated Water	0.084	[1]
Milan Industrial User Treated Water	0.000	[1]
Other Treated Water Customers (Begin 2011)	0.490	
PSF Raw Water	0.725	[1]
Milan Water Usage Growth	0.70%	
Sullivan County #1 Water Usage Growth	1.30%	
Green City Water Usage Growth	0.25%	
Raw Water Usage Growth (first 10 years)	6.00%	
Raw Water Usage Growth (after 2010)	0.00%	
Milan Industrial User Water Usage Growth	8.00%	
Milan Industrial User Water Usage Growth (after 2010)	0.00%	
Other Treated Water Growth	5.00%	

Return

Return (% of O&M expense, Years 1-5)	5%
Return (% of O&M expense, Years10 and beyond)	10%

[1] 2002 Average MGD

No Milan Industrial User, No Grants
No Phase 1 & 2 Capital

Appendix A
Scenario 1

Table 3
North Central Missouri Regional Water Commission
Forecast of Operation and Maintenance Expenses

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Treated Water Flow (MGY)	282	284	287	289	292	294	297	478	490	502
Raw Water Flow (MGY)	265	281	297	315	334	354	493	493	493	493
Total Water Flow (MGY)	546	565	584	604	626	648	790	971	983	995
Plant O&M Expenses										
Labor & Burden	$98,200	$102,100	$106,200	$110,400	$114,800	$119,400	$124,200	$129,200	$134,400	$139,800
General & Administrative	$125,000	$130,000	$135,200	$140,600	$146,200	$152,000	$158,100	$164,400	$171,000	$177,800
Electricity Costs	$47,300	$48,900	$50,600	$52,300	$54,100	$56,000	$58,000	$94,400	$99,100	$104,100
Other Utility Costs	$20,000	$20,800	$21,600	$22,500	$23,400	$24,300	$25,300	$26,300	$27,400	$28,500
Routine Maintenance	$35,600	$37,000	$38,500	$40,000	$41,600	$43,300	$45,000	$46,800	$48,700	$50,600
Chemicals	$77,500	$78,200	$78,800	$79,500	$80,200	$80,900	$81,600	$131,600	$134,800	$138,100
Lake Lease	$82,000	$84,700	$87,600	$90,700	$93,900	$0	$0	$0	$0	$0
R&R Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
Phase 1 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Phase 2 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total O&M Costs	$505,600	$521,700	$538,500	$556,000	$574,200	$495,900	$512,200	$612,700	$635,400	$658,900
Return	$25,300	$26,100	$26,900	$27,800	$28,700	$49,600	$51,200	$61,300	$63,500	$65,900
Total Annual Costs	$530,900	$547,800	$565,400	$583,800	$602,900	$545,500	$563,400	$674,000	$698,900	$724,800
Allocated O&M including Return to Treated Water	$408,700	$418,300	$428,100	$438,300	$448,700	$424,500	$420,300	$549,300	$571,300	$594,200
Allocated O&M including Return to Raw Water	$122,200	$129,500	$137,300	$145,500	$154,200	$121,000	$143,100	$124,700	$127,600	$130,600

No Milan Industrial User, No Grants
No Phase 1 & 2 Capital

Appendix A
Scenario 1

Table 3
North Central Missouri Regional Water Commission
Forecast of Operation and Maintenance Expenses

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water Flow (MGY)	515	528	541	556	571	586	602	619	636	655
Raw Water Flow (MGY)	493	493	493	493	493	493	493	493	493	493
Total Water Flow (MGY)	1,008	1,021	1,034	1,049	1,063	1,079	1,095	1,112	1,129	1,148
Plant O&M Expenses										
Labor & Burden	$145,400	$151,200	$157,200	$163,500	$170,000	$176,800	$183,900	$191,300	$199,000	$207,000
General & Administrative	$184,900	$192,300	$200,000	$208,000	$216,300	$225,000	$234,000	$243,400	$253,100	$263,200
Electricity Costs	$109,400	$114,900	$120,900	$127,100	$133,800	$140,900	$148,400	$156,300	$164,700	$173,700
Other Utility Costs	$29,600	$30,800	$32,000	$33,300	$34,600	$36,000	$37,400	$38,900	$40,500	$42,100
Routine Maintenance	$52,600	$54,700	$56,900	$59,200	$61,600	$64,100	$66,700	$69,400	$72,200	$75,100
Chemicals	$141,600	$145,200	$148,900	$152,800	$156,900	$161,100	$165,600	$170,200	$175,000	$180,100
Lake Lease	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
R&R Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
Phase 1 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Phase 2 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total O&M Costs	$683,500	$709,100	$735,900	$763,900	$793,200	$823,900	$856,000	$889,500	$924,500	$961,200
Return	$68,400	$70,900	$73,600	$76,400	$79,300	$82,400	$85,600	$89,000	$92,500	$96,100
Total Annual Costs	$751,900	$780,000	$809,500	$840,300	$872,500	$906,300	$941,600	$978,500	$1,017,000	$1,057,300
Allocated O&M Including Return to Treated Water	$618,200	$643,300	$669,600	$697,200	$726,200	$756,700	$788,800	$822,300	$857,500	$894,400
Allocated O&M Including Return to Raw Water	$133,700	$136,700	$139,900	$143,100	$146,300	$149,600	$152,800	$156,200	$159,500	$162,900

No Milan Industrial User, No Grants
No Phase 1 & 2 Capital

Appendix A
Scenario 1

Table 3
North Central Missouri Regional Water Commission
Forecast of Operation and Maintenance Expenses

Year	2024	2025	2026	2027	2028	Total
Treated Water Flow (MGY)	674	694	715	736	759	
Raw Water Flow (MGY)	493	493	493	493	493	
Total Water Flow (MGY)	1,167	1,187	1,207	1,229	1,252	
Plant O&M Expenses						
Labor & Burden	$215,300	$223,900	$232,900	$242,200	$251,900	$4,090,200
General & Administrative	$273,700	$284,600	$296,000	$307,800	$320,100	$5,202,700
Electricity Costs	$183,100	$193,200	$204,000	$215,500	$227,500	$3,078,200
Other Utility Costs	$43,800	$45,600	$47,400	$49,300	$51,300	$832,700
Routine Maintenance	$78,100	$81,200	$84,400	$87,800	$91,300	$1,482,400
Chemicals	$185,300	$190,800	$196,500	$202,500	$208,700	$3,542,400
Lake Lease	$0	$0	$0	$0	$0	$438,900
R&R Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$500,000
Phase 1 Dam O&M	$0	$0	$0	$0	$0	$0
Phase 2 Dam O&M	$0	$0	$0	$0	$0	$0
Total O&M Costs	$999,300	$1,039,300	$1,081,200	$1,125,100	$1,170,800	$19,167,500
Return	$99,900	$103,900	$108,100	$112,500	$117,100	$1,782,000
Total Annual Costs	$1,099,200	$1,143,200	$1,189,300	$1,237,600	$1,287,900	$20,949,500
Allocated O&M including Return to Treated Water	$932,900	$973,500	$1,016,200	$1,061,100	$1,107,900	$17,267,500
Allocated O&M including Return to Raw Water	$166,300	$169,700	$173,100	$176,500	$180,000	$3,682,000

No Milan Industrial User, No Grants
No Phase 1 & 2 Capital

Appendix A
Scenario 1

Table 4
North Central Missouri Regional Water Commission
Forecast Energy Expenses

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Energy Unit Cost ($/kWh)	$0.0690	0.0707	0.0725	0.0743	0.0762	0.0781	0.0800	0.0820	0.0841	0.0862
Annual Energy Usage (kWh)	660,000	665,700	671,500	677,400	683,300	689,300	695,400	1,120,700	1,148,000	1,176,300
Annual Energy Cost	$45,500	$47,100	$48,700	$50,300	$52,000	$53,800	$55,600	$91,900	$96,500	$101,400
Monthly Demand Charge ($KW)	$206.00	211.15	216.43	221.84	227.39	233.07	238.90	244.87	250.99	257.27
Monthly Peak Demand	8.50	8.71	8.93	9.15	9.38	9.62	9.86	10.10	10.36	10.62
Annual Demand Cost	$1,800	$1,800	$1,900	$2,000	$2,100	$2,200	$2,400	$2,500	$2,600	$2,700
Treated Water Electric Cost	$47,300	$48,900	$50,600	$52,300	$54,100	$56,000	$58,000	$94,400	$99,100	$104,100
Raw Water Electric Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Calculated Electric Cost	$47,300	$48,900	$50,600	$52,300	$54,100	$56,000	$58,000	$94,400	$99,100	$104,100
Total Electric Cost	$47,300	$48,900	$50,600	$52,300	$54,100	$56,000	$58,000	$94,400	$99,100	$104,100
Allocated Treated Water	$47,300	$48,900	$50,600	$52,300	$54,100	$56,000	$58,000	$94,400	$99,100	$104,100
Allocated Raw Water	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

No Milan Industrial User, No Grants
No Phase 1 & 2 Capital

Appendix A
Scenario 1

Table 4
North Central Missouri Regional Water Commission
Forecast Energy Expenses

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Energy Unit Cost ($/kWh)	0.0883	0.0905	0.0928	0.0951	0.0975	0.0999	0.1024	0.1050	0.1076	0.1103
Annual Energy Usage (kWh)	1,205,700	1,236,400	1,268,300	1,301,600	1,336,300	1,372,500	1,410,400	1,449,700	1,490,700	1,533,500
Annual Energy Cost	$106,500	$111,900	$117,700	$123,800	$130,300	$137,200	$144,500	$152,200	$160,400	$169,200
Monthly Demand Charge ($KW)	263.70	270.29	277.05	283.97	291.07	298.35	305.81	313.45	321.29	329.32
Monthly Peak Demand	10.88	11.15	11.43	11.72	12.01	12.31	12.62	12.93	13.26	13.59
Annual Demand Cost	$2,900	$3,000	$3,200	$3,300	$3,500	$3,700	$3,900	$4,100	$4,300	$4,500
Treated Water Electric Cost	$109,400	$114,900	$120,900	$127,100	$133,800	$140,900	$148,400	$156,300	$164,700	$173,700
Raw Water Electric Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Calculated Electric Cost	$109,400	$114,900	$120,900	$127,100	$133,800	$140,900	$148,400	$156,300	$164,700	$173,700
Total Electric Cost	$109,400	$114,900	$120,900	$127,100	$133,800	$140,900	$148,400	$156,300	$164,700	$173,700
Allocated Treated Water	$109,400	$114,900	$120,900	$127,100	$133,800	$140,900	$148,400	$156,300	$164,700	$173,700
Allocated Raw Water	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Appendix A
Scenario 1

Table 4
North Central Missouri Regional Water Commission
Forecast Energy Expenses

Year	2024	2025	2026	2027	2028
Energy Unit Cost ($/kWh)	0.1131	0.1159	0.1188	0.1218	0.1248
Annual Energy Usage (kWh)	1,578,200	1,624,800	1,673,500	1,724,400	1,777,500
Annual Energy Cost	$178,400	$188,300	$198,800	$210,000	$221,800
Monthly Demand Charge ($KW)	337.55	345.99	354.64	363.51	372.60
Monthly Peak Demand	13.93	14.28	14.63	15.00	15.37
Annual Demand Cost	$4,700	$4,900	$5,200	$5,500	$5,700
Treated Water Electric Cost	$183,100	$193,200	$204,000	$215,500	$227,500
Raw Water Electric Cost	$0	$0	$0	$0	$0
Calculated Electric Cost	$183,100	$193,200	$204,000	$215,500	$227,500
Total Electric Cost	$183,100	$193,200	$204,000	$215,500	$227,500
Allocated Treated Water	$183,100	$193,200	$204,000	$215,500	$227,500
Allocated Raw Water	$0	$0	$0	$0	$0

Appendix A
Scenario 1

Table 5
North Central Missouri Regional Water Commission
Projected Debt Expense

Year	Investment	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Plant Investment	$4,046,700										
Initial Debt Service Payment		$280,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000
Initial Debt Service Interest		$192,200	$188,000	$183,700	$179,100	$174,300	$169,300	$164,000	$158,500	$152,800	$146,700
Initial Debt Service Principle		$87,800	$91,900	$96,300	$100,900	$105,700	$110,700	$115,900	$121,400	$127,200	$133,200
Remaining Capital Balance - EOY		$3,958,900	$3,867,000	$3,770,700	$3,669,800	$3,564,100	$3,453,400	$3,337,500	$3,216,100	$3,088,900	$2,955,700
Supplemental Pipeline & Intake	$1,136,000										
Initial Debt Service Payment		$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600
Initial Debt Service Interest		$54,000	$52,800	$51,600	$50,300	$48,900	$47,500	$46,100	$44,500	$42,900	$41,200
Initial Debt Service Principle		$24,600	$25,800	$27,000	$28,300	$29,700	$31,100	$32,500	$34,100	$35,700	$37,400
Remaining Capital Balance - EOY		$1,111,400	$1,085,600	$1,058,600	$1,030,300	$1,000,600	$969,500	$937,000	$902,900	$867,200	$829,800
Phase 1 Dam Investment	$0										
Dam Debt Service Payment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Interest		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Principle		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Remaining Capital Balance - EOY		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

No Milan Industrial User, No Grants
No Phase 1 & 2 Capital

Appendix A
Scenario 1

Table 5
North Central Missouri Regional Water Commission
Projected Debt Expense

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Plant Investment										
Initial Debt Service Payment	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000
Initial Debt Service Interest	$140,400	$133,800	$126,800	$119,500	$111,900	$103,900	$95,600	$86,800	$77,700	$68,000
Initial Debt Service Principle	$139,600	$146,200	$153,100	$160,400	$168,000	$176,000	$184,400	$193,100	$202,300	$211,900
Remaining Capital Balance - EOY	$2,816,100	$2,669,900	$2,516,800	$2,356,400	$2,188,400	$2,012,400	$1,828,000	$1,634,900	$1,432,600	$1,220,700
Supplemental Pipeline & Intake										
Initial Debt Service Payment	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600
Initial Debt Service Interest	$39,400	$37,600	$35,600	$33,600	$31,400	$29,200	$26,800	$24,400	$21,800	$19,100
Initial Debt Service Principle	$39,200	$41,000	$43,000	$45,000	$47,200	$49,400	$51,800	$54,200	$56,800	$59,500
Remaining Capital Balance - EOY	$790,600	$749,600	$706,600	$661,600	$614,400	$565,000	$513,200	$459,000	$402,200	$342,700
Phase 1 Dam Investment										
Dam Debt Service Payment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Interest	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Principle	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Remaining Capital Balance - EOY	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

No Milan Industrial User, No Grants
No Phase 1 & 2 Capital

Appendix A
Scenario 1

Table 5
North Central Missouri Regional Water Commission
Projected Debt Expense

Year	2024	2025	2026	2027	2028	Total
Plant Investment						
Initial Debt Service Payment	$280,000	$280,000	$280,000	$280,000	$280,000	$7,000,000
Initial Debt Service Interest	$58,000	$47,400	$36,400	$24,800	$12,700	$2,952,300
Initial Debt Service Principle	$222,000	$232,500	$243,600	$255,200	$267,300	$4,046,600
Remaining Capital Balance - EOY	$998,700	$766,200	$522,600	$267,400	$100	
Supplemental Pipeline & Intake						
Initial Debt Service Payment	$78,600	$78,600	$78,600	$78,600	$78,600	$1,965,000
Initial Debt Service Interest	$16,300	$13,300	$10,200	$7,000	$3,600	$829,100
Initial Debt Service Principle	$62,300	$65,300	$68,400	$71,600	$75,000	$1,135,900
Remaining Capital Balance - EOY	$280,400	$215,100	$146,700	$75,100	$100	
Phase 1 Dam Investment						
Dam Debt Service Payment	$0	$0	$0	$0	$0	$0
Dam Debt Service Interest	$0	$0	$0	$0	$0	$0
Dam Debt Service Principle	$0	$0	$0	$0	$0	$0
Remaining Capital Balance - EOY	$0	$0	$0	$0	$0	

No Milan Industrial User, No Grants
No Phase 1 & 2 Capital

Appendix A
Scenario 1

Table 6
North Central Missouri Regional Water Commission
Projected Water Sales

Type	Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Treated Water	Milan	127.8	128.6	129.5	130.5	131.4	132.3	133.2	134.1	135.1	136.0
	Sullivan County #1	119.7	121.3	122.9	124.5	126.1	127.7	129.4	131.0	132.8	134.5
	Green City	34.3	34.3	34.3	34.3	34.3	34.3	34.3	34.3	34.4	34.4
	Milan Industrial User	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Other Treated Water Cust.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	179.0	187.9	197.3
Total Treated Water		281.8	284.2	286.7	289.2	291.7	294.3	296.9	478.5	490.1	502.2
Raw Water	PSF	264.6	280.5	297.3	315.2	334.1	354.1	492.8	492.8	492.8	492.8
Total Water		546.4	564.7	584.0	604.4	625.8	648.4	789.7	971.3	982.9	995.0
Percent Treated Water		51.6%	50.3%	49.1%	47.9%	46.6%	45.4%	37.6%	49.3%	49.9%	50.5%
Percent Raw Water		48.4%	49.7%	50.9%	52.1%	53.4%	54.6%	62.4%	50.7%	50.1%	49.5%

No Milan Industrial User, No Grants
No Phase 1 & 2 Capital

Appendix A
Scenario 1

Table 6
North Central Missouri Regional Water Commission
Projected Water Sales

Type	Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water	Milan	137.0	137.9	138.9	139.9	140.9	141.8	142.8	143.8	144.8	145.9
	Sullivan County #1	136.2	138.0	139.8	141.6	143.4	145.3	147.2	149.1	151.1	153.0
	Green City	34.4	34.4	34.4	34.4	34.4	34.4	34.5	34.5	34.5	34.5
	Milan Industrial User	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Other Treated Water Cust.	207.2	217.5	228.4	239.8	251.8	264.4	277.6	291.5	306.1	321.4
Total Treated Water		514.8	527.9	541.5	555.7	570.5	586.0	602.2	618.9	636.5	654.7
Raw Water	PSF	492.8	492.8	492.8	492.8	492.8	492.8	492.8	492.8	492.8	492.8
Total Water		1,007.6	1,020.7	1,034.3	1,048.5	1,063.3	1,078.8	1,095.0	1,111.7	1,129.3	1,147.5
Percent Treated Water		51.1%	51.7%	52.4%	53.0%	53.7%	54.3%	55.0%	55.7%	56.4%	57.1%
Percent Raw Water		48.9%	48.3%	47.6%	47.0%	46.3%	45.7%	45.0%	44.3%	43.6%	42.9%

No Milan Industrial User, No Grants
No Phase 1 & 2 Capital

Appendix A
Scenario 1

Table 6
North Central Missouri Regional Water Commission
Projected Water Sales

Type	Year	2024	2025	2026	2027	2028
Treated Water	Milan	146.9	147.9	148.9	150.0	151.0
	Sullivan County #1	155.0	157.0	159.1	161.1	163.2
	Green City	34.5	34.5	34.5	34.5	34.5
	Milan Industrial User	0.0	0.0	0.0	0.0	0.0
	Other Treated Water Cust.	337.5	354.3	372.1	390.7	410.2
Total Treated Water		673.8	693.7	714.5	736.3	758.9
Raw Water	PSF	492.8	492.8	492.8	492.8	492.8
Total Water		1,166.6	1,186.5	1,207.3	1,229.1	1,251.7
Percent Treated Water		57.8%	58.5%	59.2%	59.9%	60.6%
Percent Raw Water		42.2%	41.5%	40.8%	40.1%	39.4%

No Milan Industrial User, No Grants
No Phase 1 & 2 Capital

APPENDIX B
SCENARIO 2 – NO MILAN INDUSTRIAL USER, WITH 30% PLANT GRANT

Appendix B
Scenario 2

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Treated Water O&M Cost Including Return	$408,700	$418,300	$428,100	$438,300	$448,700	$424,500	$420,300	$549,300	$571,300	$594,200
Treated Water Debt Service	$236,500	$235,600	$234,600	$233,600	$232,600	$231,700	$225,600	$234,700	$235,200	$235,700
Total Treated Water Costs	$645,200	$653,900	$662,700	$671,900	$681,300	$656,200	$645,900	$784,000	$806,500	$829,900
Treated Water Cost ($/1000 gallons)	$2.2897	$2.3006	$2.3114	$2.3232	$2.3353	$2.2297	$2.1756	$1.6386	$1.6454	$1.6525
Raw Water Cost O&M Cost Including Return	$122,200	$129,500	$137,300	$145,500	$154,200	$121,000	$143,100	$124,700	$127,600	$130,600
Raw Water Debt Service	$38,100	$39,000	$40,000	$41,000	$42,000	$42,900	$49,000	$39,900	$39,400	$38,900
Total Raw Water Costs	$160,300	$168,500	$177,300	$186,500	$196,200	$163,900	$192,100	$164,600	$167,000	$169,500
Raw Water Cost ($/1000 gallons)	$0.6058	$0.6007	$0.5963	$0.5917	$0.5873	$0.4628	$0.3898	$0.3340	$0.3389	$0.3440

Year 1 - 5 Average Water Cost	$/1000 gal
Treated Water Costs	$2.3120
Raw Water Costs	$0.5964

Year 6 - 10 Average Water Cost	$/1000 gal
Treated Water Costs	$1.8684
Raw Water Costs	$0.3739

No Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

Appendix B
Scenario 2

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water O&M Cost Including Return	$618,200	$643,300	$669,600	$697,200	$726,200	$756,700	$788,800	$822,300	$857,500	$894,400
Treated Water Debt Service	$236,200	$236,700	$237,200	$237,700	$238,200	$238,700	$239,200	$239,800	$240,300	$240,800
Total Treated Water Costs	$854,400	$880,000	$906,800	$934,900	$964,400	$995,400	$1,028,000	$1,062,100	$1,097,800	$1,135,200
Treated Water Cost ($/1000 gallons)	$1.6598	$1.6671	$1.6746	$1.6824	$1.6904	$1.6987	$1.7072	$1.7160	$1.7248	$1.7338
Raw Water Cost O&M Cost Including Return	$133,700	$136,700	$139,900	$143,100	$146,300	$149,600	$152,800	$156,200	$159,500	$162,900
Raw Water Debt Service	$38,400	$37,900	$37,400	$36,900	$36,400	$35,900	$35,400	$34,800	$34,300	$33,800
Total Raw Water Costs	$172,100	$174,600	$177,300	$180,000	$182,700	$185,500	$188,200	$191,000	$193,800	$196,700
Raw Water Cost ($/1000 gallons)	$0.3492	$0.3543	$0.3598	$0.3653	$0.3707	$0.3764	$0.3819	$0.3876	$0.3933	$0.3991

Year 11 - 15 Average Water Cost	$/1000 gal
Treated Water Costs	$1.6748
Raw Water Costs	$0.3599

Year 16 - 20 Average Water Cost	$/1000 gal
Treated Water Costs	$1.7161
Raw Water Costs	$0.3877

No Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

Appendix B
Scenario 2

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2024	2025	2026	2027	2028
Treated Water O&M Cost Including Return	$932,900	$973,500	$1,016,200	$1,061,100	$1,107,900
Treated Water Debt Service	$241,400	$242,000	$242,500	$243,100	$243,700
Total Treated Water Costs	$1,174,300	$1,215,500	$1,258,700	$1,304,200	$1,351,600
Treated Water Cost ($/1000 gallons)	$1.7427	$1.7521	$1.7616	$1.7714	$1.7809
Raw Water Cost O&M Cost Including Return	$166,300	$169,700	$173,100	$176,500	$180,000
Raw Water Debt Service	$33,200	$32,600	$32,100	$31,500	$30,900
Total Raw Water Costs	$199,500	$202,300	$205,200	$208,000	$210,900
Raw Water Cost ($/1000 gallons)	$0.4048	$0.4105	$0.4164	$0.4221	$0.4280

Year 21 - 25 Average Water Cost	$/1000 gal
Treated Water Costs	$1.7617
Raw Water Costs	$0.4164

No Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

Appendix B
Scenario 2

Table 2
North Central Missouri Regional Water Commission
Inputs and Assumptions

Starting Year	2004

Water Plant Capital

Milan Plant Purchase Capital Requirement	$3,564,500
Milan Plant Purchase Additional Capital	$482,200
Milan Plant Purchase Grant Funding	$1,214,010
Milan Plant Purchase Capital less Grants	$2,832,690

Supplemental Pipeline & Intake Capital Requirement	$1,136,000
Pipeline & Intake Grant Funding	$0
Pipeline & Intake Capital less Grants	$1,136,000

Interest Rate for Debt Financing	4.75%
Term of Project Financing - years	25

Phase 1 Capital

Investment Year	2005
Dam and Reservoir Construction Capital	$0
Dam Construction Grant Funding	$0
Dam Construction Capital less Grants	$0
Interest Rate for Debt Financing	5.00%
Term of Project Financing - years	25

Phase 2 Capital

Investment Year	2020
Dam and Reservoir Construction Capital	$0
Dam Construction Grant Funding	$0
Dam Construction Capital less Grants	$0
Interest Rate for Debt Financing	6.00%
Term of Project Financing - years	25

Plant O&M

Inflation Rate for Labor/Materials	4.0%
Inflation Rate for Energy	2.5%
Energy Unit Cost ($/kWh)	$0.0690
Average Monthly Energy Use (kWh)	55,000
Demand Charge ($/kW)	$206
Average Demand (kW)	8.50
Other Utility Costs (Gas?)	20,000
Plant Labor	$109,100
City Labor Offset (10%)	-$10,900
Routine Maintenance (1% of Plant Capital)	$35,600
Chemical Costs per Thousand Gallons	$0.276
General and Administration Expenses	$125,000
Lake Lease per Thousand Gallons	$0.150
Renewal & Replacement Fund Requirement	$20,000

Dam & Reservoir O&M

Phase 1	$0
Phase 2	$0

Water Usage

Milan Treated Water	0.350	[1]
Sullivan County #1 Treated Water	0.328	[1]
Green City Treated Water	0.094	[1]
Milan Industrial User Treated Water	0.000	[1]
Other Treated Water Customers (Begin 2011)	0.490	
PSF Raw Water	0.725	[1]
Milan Water Usage Growth	0.70%	
Sullivan County #1 Water Usage Growth	1.30%	
Green City Water Usage Growth	0.25%	
Raw Water Usage Growth (first 10 years)	6.00%	
Raw Water Usage Growth (after 2010)	0.00%	
Milan Industrial User Water Usage Growth	8.00%	
Milan Industrial User Water Usage Growth (after 2010)	0.00%	
Other Treated Water Growth	5.00%	

Return

Return (% of O&M expense, Years 1-5)	5%
Return (% of O&M expense, Years10 and beyond)	10%

[1] 2002 Average MGD

No Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

Appendix B
Scenario 2

Table 3
North Central Missouri Regional Water Commission
Forecast of Operation and Maintenance Expenses

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Treated Water Flow (MGY)	282	284	287	289	292	294	297	478	490	502
Raw Water Flow (MGY)	265	281	297	315	334	354	493	493	493	493
Total Water Flow (MGY)	546	565	584	604	626	648	790	971	983	995
Plant O&M Expenses										
Labor & Burden	$98,200	$102,100	$106,200	$110,400	$114,800	$119,400	$124,200	$129,200	$134,400	$139,800
General & Administrative	$125,000	$130,000	$135,200	$140,600	$146,200	$152,000	$158,100	$164,400	$171,000	$177,800
Electricity Costs	$47,300	$48,900	$50,600	$52,300	$54,100	$56,000	$58,000	$94,400	$99,100	$104,100
Other Utility Costs	$20,000	$20,800	$21,600	$22,500	$23,400	$24,300	$25,300	$26,300	$27,400	$28,500
Routine Maintenance	$35,600	$37,000	$38,500	$40,000	$41,600	$43,300	$45,000	$46,800	$48,700	$50,600
Chemicals	$77,500	$78,200	$78,800	$79,500	$80,200	$80,900	$81,600	$131,600	$134,800	$138,100
Lake Lease	$82,000	$84,700	$87,600	$90,700	$93,900	$0	$0	$0	$0	$0
R&R Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
Phase 1 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Phase 2 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total O&M Costs	$505,600	$521,700	$538,500	$556,000	$574,200	$495,900	$512,200	$612,700	$635,400	$658,900
Return	$25,300	$26,100	$26,900	$27,800	$28,700	$49,600	$51,200	$61,300	$63,500	$65,900
Total Annual Costs	$530,900	$547,800	$565,400	$583,800	$602,900	$545,500	$563,400	$674,000	$698,900	$724,800
Allocated O&M including Return to Treated Water	$408,700	$418,300	$428,100	$438,300	$448,700	$424,500	$420,300	$549,300	$571,300	$594,200
Allocated O&M including Return to Raw Water	$122,200	$129,500	$137,300	$145,500	$154,200	$121,000	$143,100	$124,700	$127,600	$130,600

No Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

Appendix B
Scenario 2

Table 3
North Central Missouri Regional Water Commission
Forecast of Operation and Maintenance Expenses

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water Flow (MGY)	515	528	541	556	571	586	602	619	636	655
Raw Water Flow (MGY)	493	493	493	493	493	493	493	493	493	493
Total Water Flow (MGY)	1,008	1,021	1,034	1,049	1,063	1,079	1,095	1,112	1,129	1,148
Plant O&M Expenses										
Labor & Burden	$145,400	$151,200	$157,200	$163,500	$170,000	$176,800	$183,900	$191,300	$199,000	$207,000
General & Administrative	$184,900	$192,300	$200,000	$208,000	$216,300	$225,000	$234,000	$243,400	$253,100	$263,200
Electricity Costs	$109,400	$114,900	$120,900	$127,100	$133,800	$140,900	$148,400	$156,300	$164,700	$173,700
Other Utility Costs	$29,600	$30,800	$32,000	$33,300	$34,600	$36,000	$37,400	$38,900	$40,500	$42,100
Routine Maintenance	$52,600	$54,700	$56,900	$59,200	$61,600	$64,100	$66,700	$69,400	$72,200	$75,100
Chemicals	$141,600	$145,200	$148,900	$152,800	$156,900	$161,100	$165,600	$170,200	$175,000	$180,100
Lake Lease	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
R&R Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
Phase 1 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Phase 2 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total O&M Costs	$683,500	$709,100	$735,900	$763,900	$793,200	$823,900	$856,000	$889,500	$924,500	$961,200
Return	$68,400	$70,900	$73,600	$76,400	$79,300	$82,400	$85,600	$89,000	$92,500	$96,100
Total Annual Costs	$751,900	$780,000	$809,500	$840,300	$872,500	$906,300	$941,600	$978,500	$1,017,000	$1,057,300
Allocated O&M including Return to Treated Water	$618,200	$643,300	$669,600	$697,200	$726,200	$756,700	$788,800	$822,300	$857,500	$894,400
Allocated O&M including Return to Raw Water	$133,700	$136,700	$139,900	$143,100	$146,300	$149,600	$152,800	$156,200	$159,500	$162,900

No Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

Appendix B
Scenario 2

Table 3
North Central Missouri Regional Water Commission
Forecast of Operation and Maintenance Expences

Year	2024	2025	2026	2027	2028	Total
Treated Water Flow (MGY)	674	694	715	736	759	
Raw Water Flow (MGY)	493	493	493	493	493	
Total Water Flow (MGY)	1,167	1,187	1,207	1,229	1,252	
Plant O&M Expenses						
Labor & Burden	$215,300	$223,900	$232,900	$242,200	$251,900	$4,090,200
General & Administrative	$273,700	$284,600	$296,000	$307,800	$320,100	$5,202,700
Electricity Costs	$183,100	$193,200	$204,000	$215,500	$227,500	$3,078,200
Other Utility Costs	$43,800	$45,600	$47,400	$49,300	$51,300	$832,700
Routine Maintenance	$78,100	$81,200	$84,400	$87,800	$91,300	$1,482,400
Chemicals	$185,300	$190,800	$196,500	$202,500	$208,700	$3,542,400
Lake Lease	$0	$0	$0	$0	$0	$438,900
R&R Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$500,000
Phase 1 Dam O&M	$0	$0	$0	$0	$0	$0
Phase 2 Dam O&M	$0	$0	$0	$0	$0	$0
Total O&M Costs	$999,300	$1,039,300	$1,081,200	$1,125,100	$1,170,800	$19,167,500
Return	$99,900	$103,900	$108,100	$112,500	$117,100	$1,782,000
Total Annual Costs	$1,099,200	$1,143,200	$1,189,300	$1,237,600	$1,287,900	$20,949,500
Allocated O&M including Return to Treated Water	$932,900	$973,500	$1,016,200	$1,061,100	$1,107,900	$17,267,500
Allocated O&M including Return to Raw Water	$166,300	$169,700	$173,100	$176,500	$180,000	$3,682,000

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Scenario 2

Table 4
North Central Missouri Regional Water Commission
Forecast Energy Expenses

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Energy Unit Cost ($/kWh)	$0.0690	0.0707	0.0725	0.0743	0.0762	0.0781	0.0800	0.0820	0.0841	0.0862
Annual Energy Usage (kWh)	660,000	665,700	671,500	677,400	683,300	689,300	695,400	1,120,700	1,148,000	1,176,300
Annual Energy Cost	$45,500	$47,100	$48,700	$50,300	$52,000	$53,800	$55,600	$91,900	$96,500	$101,400
Monthly Demand Charge ($KW)	$206.00	211.15	216.43	221.84	227.39	233.07	238.90	244.87	250.99	257.27
Monthly Peak Demand	8.50	8.71	8.93	9.15	9.38	9.62	9.86	10.10	10.36	10.62
Annual Demand Cost	$1,800	$1,800	$1,900	$2,000	$2,100	$2,200	$2,400	$2,500	$2,600	$2,700
Treated Water Electric Cost	$47,300	$48,900	$50,600	$52,300	$54,100	$56,000	$58,000	$94,400	$99,100	$104,100
Raw Water Electric Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Calculated Electric Cost	$47,300	$48,900	$50,600	$52,300	$54,100	$56,000	$58,000	$94,400	$99,100	$104,100
Total Electric Cost	$47,300	$48,900	$50,600	$52,300	$54,100	$56,000	$58,000	$94,400	$99,100	$104,100
Allocated Treated Water	$47,300	$48,900	$50,600	$52,300	$54,100	$56,000	$58,000	$94,400	$99,100	$104,100
Allocated Raw Water	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Appendix B
Scenario 2

Table 4
North Central Missouri Regional Water Commission
Forecast Energy Expenses

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Energy Unit Cost ($/kWh)	0.0883	0.0905	0.0928	0.0951	0.0975	0.0999	0.1024	0.1050	0.1076	0.1103
Annual Energy Usage (kWh)	1,205,700	1,236,400	1,268,300	1,301,600	1,336,300	1,372,500	1,410,400	1,449,700	1,490,700	1,533,500
Annual Energy Cost	$106,500	$111,900	$117,700	$123,800	$130,300	$137,200	$144,500	$152,200	$160,400	$169,200
Monthly Demand Charge ($KW)	263.70	270.29	277.05	283.97	291.07	298.35	305.81	313.45	321.29	329.32
Monthly Peak Demand	10.88	11.15	11.43	11.72	12.01	12.31	12.62	12.93	13.26	13.59
Annual Demand Cost	$2,900	$3,000	$3,200	$3,300	$3,500	$3,700	$3,900	$4,100	$4,300	$4,500
Treated Water Electric Cost	$109,400	$114,900	$120,900	$127,100	$133,800	$140,900	$148,400	$156,300	$164,700	$173,700
Raw Water Electric Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Calculated Electric Cost	$109,400	$114,900	$120,900	$127,100	$133,800	$140,900	$148,400	$156,300	$164,700	$173,700
Total Electric Cost	$109,400	$114,900	$120,900	$127,100	$133,800	$140,900	$148,400	$156,300	$164,700	$173,700
Allocated Treated Water	$109,400	$114,900	$120,900	$127,100	$133,800	$140,900	$148,400	$156,300	$164,700	$173,700
Allocated Raw Water	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

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Scenario 2

Table 4
North Central Missouri Regional Water Commission
Forecast Energy Expenses

Year	2024	2025	2026	2027	2028
Energy Unit Cost ($/kWh)	0.1131	0.1159	0.1186	0.1218	0.1248
Annual Energy Usage (kWh)	1,578,200	1,624,800	1,673,500	1,724,400	1,777,500
Annual Energy Cost	$178,400	$188,300	$198,800	$210,000	$221,800
Monthly Demand Charge ($KW)	337.55	345.99	354.64	363.51	372.60
Monthly Peak Demand	13.93	14.28	14.63	15.00	15.37
Annual Demand Cost	$4,700	$4,900	$5,200	$5,500	$5,700
Treated Water Electric Cost	$183,100	$193,200	$204,000	$215,500	$227,500
Raw Water Electric Cost	$0	$0	$0	$0	$0
Calculated Electric Cost	$183,100	$193,200	$204,000	$215,500	$227,500
Total Electric Cost	$183,100	$193,200	$204,000	$215,500	$227,500
Allocated Treated Water	$183,100	$193,200	$204,000	$215,500	$227,500
Allocated Raw Water	$0	$0	$0	$0	$0

Appendix B
Scenario 2

Table 5
North Central Missouri Regional Water Commission
Projected Debt Expense

Year	Investment	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Plant Investment	$2,832,690										
Initial Debt Service Payment		$196,000	$196,000	$196,000	$196,000	$196,000	$196,000	$196,000	$196,000	$196,000	$196,000
Initial Debt Service Interest		$134,600	$131,600	$128,600	$125,400	$122,000	$118,500	$114,800	$111,000	$106,900	$102,700
Initial Debt Service Principle		$61,400	$64,300	$67,400	$70,600	$74,000	$77,500	$81,100	$85,000	$89,000	$93,300
Remaining Capital Balance - EOY		$2,771,290	$2,706,990	$2,639,590	$2,568,990	$2,494,990	$2,417,490	$2,336,390	$2,251,390	$2,162,390	$2,069,090
Supplemental Pipeline & Intake	$1,136,000										
Initial Debt Service Payment		$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600
Initial Debt Service Interest		$54,000	$52,800	$51,600	$50,300	$48,900	$47,500	$46,100	$44,500	$42,900	$41,200
Initial Debt Service Principle		$24,600	$25,800	$27,000	$28,300	$29,700	$31,100	$32,500	$34,100	$35,700	$37,400
Remaining Capital Balance - EOY		$1,111,400	$1,085,600	$1,058,600	$1,030,300	$1,000,600	$969,500	$937,000	$902,900	$867,200	$829,800
Phase 1 Dam Investment	$0										
Dam Debt Service Payment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Interest		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Principle		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Remaining Capital Balance - EOY		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

No Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

Appendix B
Scenario 2

Table 5
North Central Missouri Regional Water Commission
Projected Debt Expense

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Plant Investment										
Initial Debt Service Payment	$196,000	$196,000	$196,000	$196,000	$196,000	$196,000	$196,000	$196,000	$196,000	$196,000
Initial Debt Service Interest	$98,300	$93,600	$88,800	$83,700	$78,400	$72,800	$66,900	$60,800	$54,400	$47,600
Initial Debt Service Principle	$97,700	$102,300	$107,200	$112,300	$117,600	$123,200	$129,100	$135,200	$141,600	$148,400
Remaining Capital Balance - EOY	$1,971,390	$1,869,090	$1,761,890	$1,649,590	$1,531,990	$1,408,790	$1,279,690	$1,144,490	$1,002,890	$854,490
Supplemental Pipeline & Intake										
Initial Debt Service Payment	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600
Initial Debt Service Interest	$39,400	$37,600	$35,600	$33,600	$31,400	$29,200	$26,800	$24,400	$21,800	$19,100
Initial Debt Service Principle	$39,200	$41,000	$43,000	$45,000	$47,200	$49,400	$51,800	$54,200	$56,800	$59,500
Remaining Capital Balance - EOY	$790,600	$749,600	$706,600	$661,600	$614,400	$565,000	$513,200	$459,000	$402,200	$342,700
Phase 1 Dam Investment										
Dam Debt Service Payment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Interest	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Principle	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Remaining Capital Balance - EOY	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

No Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

Appendix B
Scenario 2

Table 5
North Central Missouri Regional Water Commission
Projected Debt Expense

Year	2024	2025	2026	2027	2028	Total
Plant Investment						
Initial Debt Service Payment	$196,000	$196,000	$196,000	$196,000	$196,000	$4,900,000
Initial Debt Service Interest	$40,600	$33,200	$25,500	$17,400	$8,900	$2,067,000
Initial Debt Service Principle	$155,400	$162,800	$170,500	$178,600	$187,100	$2,832,600
Remaining Capital Balance - EOY	$699,090	$536,290	$365,790	$187,190	$90	
Supplemental Pipeline & Intake						
Initial Debt Service Payment	$78,600	$78,600	$78,600	$78,600	$78,600	$1,965,000
Initial Debt Service Interest	$16,300	$13,300	$10,200	$7,000	$3,600	$829,100
Initial Debt Service Principle	$62,300	$65,300	$68,400	$71,600	$75,000	$1,135,900
Remaining Capital Balance - EOY	$280,400	$215,100	$146,700	$75,100	$100	
Phase 1 Dam Investment						
Dam Debt Service Payment	$0	$0	$0	$0	$0	$0
Dam Debt Service Interest	$0	$0	$0	$0	$0	$0
Dam Debt Service Principle	$0	$0	$0	$0	$0	$0
Remaining Capital Balance - EOY	$0	$0	$0	$0	$0	

No Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

Appendix B
Scenario 2

Table 6
North Central Missouri Regional Water Commission
Projected Water Sales

Type	Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Treated Water	Milan	127.8	128.6	129.5	130.5	131.4	132.3	133.2	134.1	135.1	136.0
	Sullivan County #1	119.7	121.3	122.9	124.5	126.1	127.7	129.4	131.0	132.8	134.5
	Green City	34.3	34.3	34.3	34.3	34.3	34.3	34.3	34.3	34.4	34.4
	Milan Industrial User	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Other Treated Water Cust.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Treated Water		281.8	284.2	286.7	289.2	291.7	294.3	296.9	179.0	187.9	197.3
Raw Water	PSF	264.6	280.5	297.3	315.2	334.1	354.1	492.8	492.8	492.8	492.8
Total Water		546.4	564.7	584.0	604.4	625.8	648.4	789.7	971.3	982.9	995.0
Percent Treated Water		51.6%	50.3%	49.1%	47.9%	46.6%	45.4%	37.6%	49.3%	49.9%	50.5%
Percent Raw Water		48.4%	49.7%	50.9%	52.1%	53.4%	54.6%	62.4%	50.7%	50.1%	49.5%

No Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

Appendix B
Scenario 2

Table 6
North Central Missouri Regional Water Commission
Projected Water Sales

Type	Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water	Milan	137.0	137.9	138.9	139.9	140.9	141.8	142.8	143.8	144.8	145.9
	Sullivan County #1	136.2	138.0	139.8	141.6	143.4	145.3	147.2	149.1	151.1	153.0
	Green City	34.4	34.4	34.4	34.4	34.4	34.4	34.5	34.5	34.5	34.5
	Milan Industrial User	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Other Treated Water Cust.	207.2	217.5	228.4	239.8	251.8	264.4	277.6	291.5	306.1	321.4
Total Treated Water		514.8	527.9	541.5	555.7	570.5	586.0	602.2	618.9	636.5	654.7
Raw Water	PSF	492.8	492.8	492.8	492.8	492.8	492.8	492.8	492.8	492.8	492.8
Total Water		1,007.6	1,020.7	1,034.3	1,048.5	1,063.3	1,078.8	1,095.0	1,111.7	1,129.3	1,147.5
Percent Treated Water		51.1%	51.7%	52.4%	53.0%	53.7%	54.3%	55.0%	55.7%	56.4%	57.1%
Percent Raw Water		48.9%	48.3%	47.6%	47.0%	46.3%	45.7%	45.0%	44.3%	43.6%	42.9%

No Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

Appendix B
Scenario 2

Table 6
North Central Missouri Regional Water Commission
Projected Water Sales

Type	Year	2024	2025	2026	2027	2028
Treated Water	Milan	146.9	147.9	148.9	150.0	151.0
	Sullivan County #1	155.0	157.0	159.1	161.1	163.2
	Green City	34.5	34.5	34.5	34.5	34.5
	Milan Industrial User	0.0	0.0	0.0	0.0	0.0
	Other Treated Water Cust.	337.5	354.3	372.1	390.7	410.2
Total Treated Water		673.8	693.7	714.5	736.3	758.9
Raw Water	PSF	492.8	492.8	492.8	492.8	492.8
Total Water		1,166.6	1,186.5	1,207.3	1,229.1	1,251.7
Percent Treated Water		57.8%	58.5%	59.2%	59.9%	60.6%
Percent Raw Water		42.2%	41.5%	40.8%	40.1%	39.4%

No Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

APPENDIX C
SCENARIO 3 – NO MILAN INDUSTRIAL USER, WITH 50% PLANT GRANT

Appendix C
Scenario 3

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Treated Water O&M Cost Including Return	$408,700	$418,300	$428,100	$438,300	$448,700	$424,500	$420,300	$549,300	$571,300	$594,200
Treated Water Debt Service	$180,500	$179,600	$178,600	$177,600	$176,600	$175,700	$169,600	$178,700	$179,200	$179,700
Total Treated Water Costs	$589,200	$597,900	$606,700	$615,900	$625,300	$600,200	$589,900	$728,000	$750,500	$773,900
Treated Water Cost ($/1000 gallons)	$2.0910	$2.1036	$2.1161	$2.1296	$2.1433	$2.0394	$1.9869	$1.5215	$1.5312	$1.5410
Raw Water Cost O&M Cost Including Return	$122,200	$129,500	$137,300	$145,500	$154,200	$121,000	$143,100	$124,700	$127,600	$130,600
Raw Water Debt Service	$38,100	$39,000	$40,000	$41,000	$42,000	$42,900	$49,000	$39,900	$39,400	$38,900
Total Raw Water Costs	$160,300	$168,500	$177,300	$186,500	$196,200	$163,900	$192,100	$164,600	$167,000	$169,500
Raw Water Cost ($/1000 gallons)	$0.6058	$0.6007	$0.5963	$0.5917	$0.5873	$0.4628	$0.3898	$0.3340	$0.3389	$0.3440

Year 1 - 5 Average Water Cost	$/1000 gal
Treated Water Costs	$2.1167
Raw Water Costs	$0.5964

Year 6 - 10 Average Water Cost	$/1000 gal
Treated Water Costs	$1.7240
Raw Water Costs	$0.3739

No Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix C
Scenario 3

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water O&M Cost Including Return	$618,200	$643,300	$669,600	$697,200	$726,200	$756,700	$788,800	$822,300	$857,500	$894,400
Treated Water Debt Service	$180,200	$180,700	$181,200	$181,700	$182,200	$182,700	$183,200	$183,800	$184,300	$184,800
Total Treated Water Costs	$798,400	$824,000	$850,800	$878,900	$908,400	$939,400	$972,000	$1,006,100	$1,041,800	$1,079,200
Treated Water Cost ($/1000 gallons)	$1.5510	$1.5610	$1.5712	$1.5816	$1.5922	$1.6032	$1.6142	$1.6255	$1.6369	$1.6483
Raw Water Cost O&M Cost Including Return	$133,700	$136,700	$139,900	$143,100	$146,300	$149,600	$152,800	$156,200	$159,500	$162,900
Raw Water Debt Service	$38,400	$37,900	$37,400	$36,900	$36,400	$35,900	$35,400	$34,800	$34,300	$33,800
Total Raw Water Costs	$172,100	$174,600	$177,300	$180,000	$182,700	$185,500	$188,200	$191,000	$193,800	$196,700
Raw Water Cost ($/1000 gallons)	$0.3492	$0.3543	$0.3598	$0.3653	$0.3707	$0.3764	$0.3819	$0.3876	$0.3933	$0.3991

Year 11 - 15 Average Water Cost	$/1000 gal
Treated Water Costs	$1.5714
Raw Water Costs	$0.3599

Year 16 - 20 Average Water Cost	$/1000 gal
Treated Water Costs	$1.6256
Raw Water Costs	$0.3877

No Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix C
Scenario 3

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water O&M Cost Including Return	$618,200	$643,300	$669,600	$697,200	$726,200	$756,700	$788,800	$822,300	$857,500	$894,400
Treated Water Debt Service	$180,200	$180,700	$181,200	$181,700	$182,200	$182,700	$183,200	$183,800	$184,300	$184,800
Total Treated Water Costs	$798,400	$824,000	$850,800	$878,900	$908,400	$939,400	$972,000	$1,006,100	$1,041,800	$1,079,200
Treated Water Cost ($/1000 gallons)	$1.5510	$1.5610	$1.5712	$1.5816	$1.5922	$1.6032	$1.6142	$1.6255	$1.6369	$1.6483
Raw Water Cost O&M Cost Including Return	$133,700	$136,700	$139,900	$143,100	$146,300	$149,600	$152,800	$156,200	$159,500	$162,900
Raw Water Debt Service	$38,400	$37,900	$37,400	$36,900	$36,400	$35,900	$35,400	$34,800	$34,300	$33,800
Total Raw Water Costs	$172,100	$174,600	$177,300	$180,000	$182,700	$185,500	$188,200	$191,000	$193,800	$196,700
Raw Water Cost ($/1000 gallons)	$0.3492	$0.3543	$0.3598	$0.3653	$0.3707	$0.3764	$0.3819	$0.3876	$0.3933	$0.3991

Year 11 - 15 Average Water Cost	$/1000 gal
Treated Water Costs	$1.5714
Raw Water Costs	$0.3599

Year 16 - 20 Average Water Cost	$/1000 gal
Treated Water Costs	$1.6256
Raw Water Costs	$0.3877

No Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix C
Scenario 3

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2024	2025	2026	2027	2028
Treated Water O&M Cost Including Return	$932,900	$973,500	$1,016,200	$1,061,100	$1,107,900
Treated Water Debt Service	$185,400	$186,000	$186,500	$187,100	$187,700
Total Treated Water Costs	$1,118,300	$1,159,500	$1,202,700	$1,248,200	$1,295,600
Treated Water Cost ($/1000 gallons)	$1.6596	$1.6714	$1.6832	$1.6953	$1.7071

Raw Water Cost O&M Cost Including Return	$166,300	$169,700	$173,100	$176,500	$180,000
Raw Water Debt Service	$33,200	$32,600	$32,100	$31,500	$30,900
Total Raw Water Costs	$199,500	$202,300	$205,200	$208,000	$210,900
Raw Water Cost ($/1000 gallons)	$0.4048	$0.4105	$0.4164	$0.4221	$0.4280

Year 21 - 25 Average Water Cost	$/1000 gal
Treated Water Costs	$1.6833
Raw Water Costs	$0.4164

Appendix C
Scenario 3

Table 2
North Central Missouri Regional Water Commission
Inputs and Assumptions

Starting Year	2004

Water Plant Capital

Milan Plant Purchase Capital Requirement	$3,564,500
Milan Plant Purchase Additional Capital	$482,200
Milan Plant Purchase Grant Funding	$2,023,350
Milan Plant Purchase Capital less Grants	$2,023,350

Supplemental Pipeline & Intake Capital Requirement	$1,136,000
Pipeline & Intake Grant Funding	$0
Pipeline & Intake Capital less Grants	$1,136,000

Interest Rate for Debt Financing	4.75%
Term of Project Financing - years	25

Phase 1 Capital

Investment Year	2005
Dam and Reservoir Construction Capital	$0
Dam Construction Grant Funding	$0
Dam Construction Capital less Grants	$0
Interest Rate for Debt Financing	5.00%
Term of Project Financing - years	25

Phase 2 Capital

Investment Year	2020
Dam and Reservoir Construction Capital	$0
Dam Construction Grant Funding	$0
Dam Construction Capital less Grants	$0
Interest Rate for Debt Financing	6.00%
Term of Project Financing - years	25

Plant O&M

Inflation Rate for Labor/Materials	4.0%
Inflation Rate for Energy	2.5%
Energy Unit Cost ($/kWh)	$0.0690
Average Monthly Energy Use (kWh)	55,000
Demand Charge ($/kW)	$206
Average Demand (kW)	8.60
Other Utility Costs (Gas?)	20,000
Plant Labor	$109,100
City Labor Offset (10%)	-$10,900
Routine Maintenance (1% of Plant Capital)	$35,600
Chemical Costs per Thousand Gallons	$0.275
General and Administration Expenses	$125,000
Lake Lease per Thousand Gallons	$0.150
Renewal & Replacement Fund Requirement	$20,000

Dam & Reservoir O&M

Phase 1	$0
Phase 2	$0

Water Usage

Milan Treated Water	0.350	[1]
Sullivan County #1 Treated Water	0.328	[1]
Green City Treated Water	0.094	[1]
Milan Industrial User Treated Water	0.000	[1]
Other Treated Water Customers (Begin 2011)	0.490	
PSF Raw Water	0.725	[1]
Milan Water Usage Growth	0.70%	
Sullivan County #1 Water Usage Growth	1.30%	
Green City Water Usage Growth	0.25%	
Raw Water Usage Growth (first 10 years)	6.00%	
Raw Water Usage Growth (after 2010)	0.00%	
Milan Industrial User Water Usage Growth	6.00%	
Milan Industrial User Water Usage Growth (after 2010)	0.00%	
Other Treated Water Growth	5.00%	

Return

Return (% of O&M expense, Years 1-5)	5%
Return (% of O&M expense, Years10 and beyond)	10%

[1] 2002 Average MGD

Appendix C
Scenario 3

Table 3
North Central Missouri Regional Water Commission
Forecast of Operation and Maintenance Expenses

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Treated Water Flow (MGY)	282	284	287	289	292	294	297	478	490	502
Raw Water Flow (MGY)	265	281	297	315	334	354	493	493	493	493
Total Water Flow (MGY)	546	565	584	604	626	648	790	971	983	995
Plant O&M Expenses										
Labor & Burden	$98,200	$102,100	$106,200	$110,400	$114,800	$119,400	$124,200	$129,200	$134,400	$139,800
General & Administrative	$125,000	$130,000	$135,200	$140,600	$146,200	$152,000	$158,100	$164,400	$171,000	$177,800
Electricity Costs	$47,300	$48,900	$50,600	$52,300	$54,100	$56,000	$58,000	$94,400	$99,100	$104,100
Other Utility Costs	$20,000	$20,800	$21,600	$22,500	$23,400	$24,300	$25,300	$26,300	$27,400	$26,500
Routine Maintenance	$35,600	$37,000	$38,500	$40,000	$41,600	$43,300	$45,000	$46,800	$48,700	$50,600
Chemicals	$77,500	$78,200	$78,800	$79,500	$80,200	$80,900	$81,600	$131,600	$134,800	$138,100
Lake Lease	$82,000	$84,700	$87,600	$90,700	$93,900	$0	$0	$0	$0	$0
R&R Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
Phase 1 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Phase 2 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total O&M Costs	$505,600	$521,700	$538,500	$556,000	$574,200	$495,900	$512,200	$612,700	$635,400	$658,900
Return	$25,300	$26,100	$26,900	$27,800	$28,700	$49,600	$51,200	$61,300	$63,500	$65,900
Total Annual Costs	$530,900	$547,800	$565,400	$583,800	$602,900	$545,500	$563,400	$674,000	$698,900	$724,800
Allocated O&M including Return to Treated Water	$408,700	$418,300	$428,100	$438,300	$448,700	$424,500	$420,300	$549,300	$571,300	$594,200
Allocated O&M including Return to Raw Water	$122,200	$129,500	$137,300	$145,500	$154,200	$121,000	$143,100	$124,700	$127,600	$130,600

No Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix C
Scenario 3

Table 3
North Central Missouri Regional Water Commission
Forecast of Operation and Maintenance Expenses

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water Flow (MGY)	515	528	541	556	571	586	602	619	636	655
Raw Water Flow (MGY)	493	493	493	493	493	493	493	493	493	493
Total Water Flow (MGY)	1,008	1,021	1,034	1,049	1,063	1,079	1,095	1,112	1,129	1,148
Plant O&M Expenses										
Labor & Burden	$145,400	$151,200	$157,200	$163,500	$170,000	$176,800	$183,900	$191,300	$199,000	$207,000
General & Administrative	$184,900	$192,300	$200,000	$208,000	$216,300	$225,000	$234,000	$243,400	$253,100	$263,200
Electricity Costs	$109,400	$114,900	$120,900	$127,100	$133,800	$140,900	$148,400	$156,300	$164,700	$173,700
Other Utility Costs	$29,600	$30,800	$32,000	$33,300	$34,600	$36,000	$37,400	$38,900	$40,500	$42,100
Routine Maintenance	$52,600	$54,700	$56,900	$59,200	$61,600	$64,100	$66,700	$69,400	$72,200	$75,100
Chemicals	$141,600	$145,200	$148,900	$152,800	$156,900	$161,100	$165,600	$170,200	$175,000	$180,100
Lake Lease	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
R&R Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
Phase 1 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Phase 2 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total O&M Costs	$683,500	$709,100	$735,900	$763,900	$793,200	$823,900	$856,000	$889,500	$924,500	$961,200
Return	$68,400	$70,900	$73,600	$76,400	$79,300	$82,400	$85,600	$89,000	$92,500	$96,100
Total Annual Costs	$751,900	$780,000	$809,500	$840,300	$872,500	$906,300	$941,600	$978,500	$1,017,000	$1,057,300
Allocated O&M including Return to Treated Water	$618,200	$643,300	$669,600	$697,200	$726,200	$756,700	$788,800	$822,300	$857,500	$894,400
Allocated O&M including Return to Raw Water	$133,700	$136,700	$139,900	$143,100	$146,300	$149,600	$152,800	$156,200	$159,500	$162,900

No Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix C
Scenario 3

Table 3
North Central Missouri Regional Water Commission
Forecast of Operation and Maintenance Expenses

Year	2024	2025	2026	2027	2028	Total
Treated Water Flow (MGY)	674	694	715	736	759	
Raw Water Flow (MGY)	493	493	493	493	493	
Total Water Flow (MGY)	1,167	1,187	1,207	1,229	1,252	
Plant O&M Expenses						
Labor & Burden	$215,300	$223,900	$232,900	$242,200	$251,900	$4,090,200
General & Administrative	$273,700	$284,600	$296,000	$307,800	$320,100	$5,202,700
Electricity Costs	$183,100	$193,200	$204,000	$215,500	$227,500	$3,078,200
Other Utility Costs	$43,800	$45,600	$47,400	$49,300	$51,300	$832,700
Routine Maintenance	$78,100	$81,200	$84,400	$87,800	$91,300	$1,482,400
Chemicals	$185,300	$190,800	$196,500	$202,500	$208,700	$3,542,400
Lake Lease	$0	$0	$0	$0	$0	$438,900
R&R Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$500,000
Phase 1 Dam O&M	$0	$0	$0	$0	$0	$0
Phase 2 Dam O&M	$0	$0	$0	$0	$0	$0
Total O&M Costs	$999,300	$1,039,300	$1,081,200	$1,125,100	$1,170,800	$19,167,500
Return	$99,900	$103,900	$108,100	$112,500	$117,100	$1,782,000
Total Annual Costs	$1,099,200	$1,143,200	$1,189,300	$1,237,600	$1,287,900	$20,949,500
Allocated O&M including Return to Treated Water	$932,900	$973,500	$1,016,200	$1,061,100	$1,107,900	$17,267,500
Allocated O&M including Return to Raw Water	$166,300	$169,700	$173,100	$176,500	$180,000	$3,682,000

No Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix C
Scenario 3

Table 4
North Central Missouri Regional Water Commission
Forecast Energy Expenses

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Energy Unit Cost ($/kWh)	$0.0690	0.0707	0.0725	0.0743	0.0762	0.0781	0.0800	0.0820	0.0841	0.0862
Annual Energy Usage (kWh)	660,000	665,700	671,500	677,400	683,300	689,300	695,400	1,120,700	1,148,000	1,176,300
Annual Energy Cost	$45,500	$47,100	$48,700	$50,300	$52,000	$53,800	$55,600	$91,900	$96,500	$101,400
Monthly Demand Charge ($KW)	$206.00	211.15	216.43	221.84	227.39	233.07	238.90	244.87	250.99	257.27
Monthly Peak Demand	8.50	8.71	8.93	9.15	9.38	9.62	9.86	10.10	10.36	10.62
Annual Demand Cost	$1,800	$1,800	$1,900	$2,000	$2,100	$2,200	$2,400	$2,500	$2,600	$2,700
Treated Water Electric Cost	$47,300	$48,900	$50,600	$52,300	$54,100	$56,000	$58,000	$94,400	$99,100	$104,100
Raw Water Electric Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Calculated Electric Cost	$47,300	$48,900	$50,600	$52,300	$54,100	$56,000	$58,000	$94,400	$99,100	$104,100
Total Electric Cost	$47,300	$48,900	$50,600	$52,300	$54,100	$56,000	$58,000	$94,400	$99,100	$104,100
Allocated Treated Water	$47,300	$48,900	$50,600	$52,300	$54,100	$56,000	$58,000	$94,400	$99,100	$104,100
Allocated Raw Water	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Appendix C
Scenario 3

Table 4
North Central Missouri Regional Water Commission
Forecast Energy Expenses

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Energy Unit Cost ($/kWh)	0.0883	0.0905	0.0928	0.0951	0.0975	0.0999	0.1024	0.1050	0.1076	0.1103
Annual Energy Usage (kWh)	1,205,700	1,236,400	1,268,300	1,301,600	1,336,300	1,372,500	1,410,400	1,449,700	1,490,700	1,533,500
Annual Energy Cost	$106,500	$111,900	$117,700	$123,800	$130,300	$137,200	$144,500	$152,200	$160,400	$169,200
Monthly Demand Charge ($KW)	263.70	270.29	277.05	283.97	291.07	298.35	305.81	313.45	321.29	329.32
Monthly Peak Demand	10.88	11.15	11.43	11.72	12.01	12.31	12.62	12.93	13.26	13.59
Annual Demand Cost	$2,900	$3,000	$3,200	$3,300	$3,500	$3,700	$3,900	$4,100	$4,300	$4,500
Treated Water Electric Cost	$109,400	$114,900	$120,900	$127,100	$133,800	$140,900	$148,400	$156,300	$164,700	$173,700
Raw Water Electric Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Calculated Electric Cost	$109,400	$114,900	$120,900	$127,100	$133,800	$140,900	$148,400	$156,300	$164,700	$173,700
Total Electric Cost	$109,400	$114,900	$120,900	$127,100	$133,800	$140,900	$148,400	$156,300	$164,700	$173,700
Allocated Treated Water	$109,400	$114,900	$120,900	$127,100	$133,800	$140,900	$148,400	$156,300	$164,700	$173,700
Allocated Raw Water	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Appendix C
Scenario 3

Table 4
North Central Missouri Regional Water Commission
Forecast Energy Expenses

Year	2024	2025	2026	2027	2028
Energy Unit Cost ($/kWh)	0.1131	0.1159	0.1188	0.1218	0.1248
Annual Energy Usage (kWh)	1,576,200	1,624,800	1,673,500	1,724,400	1,777,500
Annual Energy Cost	$178,400	$188,300	$198,800	$210,000	$221,800
Monthly Demand Charge ($KW)	337.55	345.99	354.64	363.51	372.60
Monthly Peak Demand	13.93	14.28	14.63	15.00	15.37
Annual Demand Cost	$4,700	$4,900	$5,200	$5,500	$5,700
Treated Water Electric Cost	$183,100	$193,200	$204,000	$215,500	$227,500
Raw Water Electric Cost	$0	$0	$0	$0	$0
Calculated Electric Cost	$183,100	$193,200	$204,000	$215,500	$227,500
Total Electric Cost	$183,100	$193,200	$204,000	$215,500	$227,500
Allocated Treated Water	$183,100	$193,200	$204,000	$215,500	$227,500
Allocated Raw Water	$0	$0	$0	$0	$0

Appendix C
Scenario 3

Table 5
North Central Missouri Regional Water Commission
Projected Debt Expense

Year	Investment	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Plant Investment	$2,023,350										
Initial Debt Service Payment		$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000
Initial Debt Service Interest		$96,100	$94,000	$91,800	$89,600	$87,200	$84,700	$82,000	$79,300	$76,400	$73,400
Initial Debt Service Principle		$43,900	$46,000	$48,100	$50,400	$52,800	$55,300	$58,000	$60,700	$63,600	$66,600
Remaining Capital Balance - EOY		$1,979,450	$1,933,450	$1,885,350	$1,834,950	$1,782,150	$1,726,850	$1,668,850	$1,608,150	$1,544,550	$1,477,950
Supplemental Pipeline & Intake	$1,136,000										
Initial Debt Service Payment		$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600
Initial Debt Service Interest		$54,000	$52,800	$51,600	$50,300	$48,900	$47,500	$46,100	$44,500	$42,900	$41,200
Initial Debt Service Principle		$24,600	$25,800	$27,000	$28,300	$29,700	$31,100	$32,500	$34,100	$35,700	$37,400
Remaining Capital Balance - EOY		$1,111,400	$1,085,600	$1,058,600	$1,030,300	$1,000,600	$969,500	$937,000	$902,900	$867,200	$829,800
Phase 1 Dam Investment	$0										
Dam Debt Service Payment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Interest		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Principle		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Remaining Capital Balance - EOY		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

No Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix C
Scenario 3

Table 5
North Central Missouri Regional Water Commission
Projected Debt Expense

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Plant Investment										
Initial Debt Service Payment	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000
Initial Debt Service Interest	$70,200	$66,900	$63,400	$59,800	$56,000	$52,000	$47,800	$43,400	$38,800	$34,000
Initial Debt Service Principle	$69,800	$73,100	$76,600	$80,200	$84,000	$88,000	$92,200	$96,600	$101,200	$106,000
Remaining Capital Balance - EOY	$1,408,150	$1,335,050	$1,258,450	$1,178,250	$1,094,250	$1,006,250	$914,050	$817,450	$716,250	$610,250
Supplemental Pipeline & Intake										
Initial Debt Service Payment	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600
Initial Debt Service Interest	$39,400	$37,600	$35,600	$33,600	$31,400	$29,200	$26,800	$24,400	$21,800	$19,100
Initial Debt Service Principle	$39,200	$41,000	$43,000	$45,000	$47,200	$49,400	$51,800	$54,200	$56,800	$59,500
Remaining Capital Balance - EOY	$790,600	$749,600	$706,600	$661,600	$614,400	$565,000	$513,200	$459,000	$402,200	$342,700
Phase 1 Dam Investment										
Dam Debt Service Payment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Interest	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Principle	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Remaining Capital Balance - EOY	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

No Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix C
Scenario 3

Table 5
North Central Missouri Regional Water Commission
Projected Debt Expense

Year	2024	2025	2026	2027	2028	Total
Plant Investment						
Initial Debt Service Payment	$140,000	$140,000	$140,000	$140,000	$140,000	$3,500,000
Initial Debt Service Interest	$29,000	$23,700	$18,200	$12,400	$6,300	$1,476,400
Initial Debt Service Principle	$111,000	$116,300	$121,800	$127,600	$133,600	$2,023,400
Remaining Capital Balance - EOY	$499,250	$382,950	$261,150	$133,550	-$50	
Supplemental Pipeline & Intake						
Initial Debt Service Payment	$78,600	$78,600	$78,600	$78,600	$78,600	$1,965,000
Initial Debt Service Interest	$16,300	$13,300	$10,200	$7,000	$3,600	$829,100
Initial Debt Service Principle	$62,300	$65,300	$68,400	$71,600	$75,000	$1,135,900
Remaining Capital Balance - EOY	$280,400	$215,100	$146,700	$75,100	$100	
Phase 1 Dam Investment						
Dam Debt Service Payment	$0	$0	$0	$0	$0	$0
Dam Debt Service Interest	$0	$0	$0	$0	$0	$0
Dam Debt Service Principle	$0	$0	$0	$0	$0	$0
Remaining Capital Balance - EOY	$0	$0	$0	$0	$0	

No Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix C
Scenario 3

Table 6
North Central Missouri Regional Water Commission
Projected Water Sales

Type	Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Treated Water	Milan	127.8	128.6	129.5	130.5	131.4	132.3	133.2	134.1	135.1	136.0
	Sullivan County #1	119.7	121.3	122.9	124.5	126.1	127.7	129.4	131.0	132.8	134.5
	Green City	34.3	34.3	34.3	34.3	34.3	34.3	34.3	34.3	34.4	34.4
	Milan Industrial User	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Other Treated Water Cust.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	179.0	187.9	197.3
Total Treated Water		281.8	284.2	286.7	289.2	291.7	294.3	296.9	478.5	490.1	502.2
Raw Water	PSF	264.6	280.5	297.3	315.2	334.1	354.1	492.8	492.8	492.8	492.8
Total Water		546.4	564.7	584.0	604.4	625.8	648.4	789.7	971.3	982.9	995.0
Percent Treated Water		51.6%	50.3%	49.1%	47.9%	46.6%	45.4%	37.6%	49.3%	49.9%	50.5%
Percent Raw Water		48.4%	49.7%	50.9%	52.1%	53.4%	54.6%	62.4%	50.7%	50.1%	49.5%

No Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix C
Scenario 3

Table 6
North Central Missouri Regional Water Commission
Projected Water Sales

Type	Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water	Milan	137.0	137.9	138.9	139.9	140.9	141.8	142.8	143.8	144.8	145.9
	Sullivan County #1	136.2	138.0	139.8	141.6	143.4	145.3	147.2	149.1	151.1	153.0
	Green City	34.4	34.4	34.4	34.4	34.4	34.4	34.5	34.5	34.5	34.5
	Milan Industrial User	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Other Treated Water Cust.	207.2	217.5	228.4	239.8	251.8	264.4	277.6	291.5	306.1	321.4
Total Treated Water		514.8	527.9	541.5	555.7	570.5	586.0	602.2	618.9	636.5	654.7
Raw Water	PSF	492.8	492.8	492.8	492.8	492.8	492.8	492.8	492.8	492.8	492.8
Total Water		1,007.6	1,020.7	1,034.3	1,048.5	1,063.3	1,078.8	1,095.0	1,111.7	1,129.3	1,147.5
Percent Treated Water		51.1%	51.7%	52.4%	53.0%	53.7%	54.3%	55.0%	55.7%	56.4%	57.1%
Percent Raw Water		48.9%	48.3%	47.6%	47.0%	46.3%	45.7%	45.0%	44.3%	43.6%	42.9%

No Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix C
Scenario 3

Table 5
North Central Missouri Regional Water Commission
Projected Water Sales

Type	Year	2024	2025	2026	2027	2028
Treated Water	Milan	146.9	147.9	148.9	150.0	151.0
	Sullivan County #1	155.0	157.0	159.1	161.1	163.2
	Green City	34.5	34.5	34.5	34.5	34.5
	Milan Industrial User	0.0	0.0	0.0	0.0	0.0
	Other Treated Water Cust.	337.5	354.3	372.1	390.7	410.2
Total Treated Water		673.8	693.7	714.5	736.3	758.9
Raw Water	PSF	492.8	492.8	492.8	492.8	492.8
Total Water		1,166.6	1,186.5	1,207.3	1,229.1	1,251.7
Percent Treated Water		57.8%	58.5%	59.2%	59.9%	60.6%
Percent Raw Water		42.2%	41.5%	40.8%	40.1%	39.4%

No Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

APPENDIX D
SCENARIO 4 – WITH MILAN INDUSTRIAL USER, NO GRANTS

Appendix D
Scenario 4

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Treated Water O&M Cost Including Return	$482,700	$499,600	$517,500	$536,300	$556,300	$599,800	$685,300	$791,000	$814,000	$837,900
Treated Water Debt Service	$328,000	$327,500	$327,000	$326,500	$326,000	$330,900	$329,200	$332,800	$333,000	$333,200
Total Treated Water Costs	$810,700	$827,100	$844,500	$862,800	$882,300	$930,700	$1,014,500	$1,123,800	$1,147,000	$1,171,100
Treated Water Cost ($/1000 gallons)	$1.9569	$1.9355	$1.9139	$1.8916	$1.8693	$1.4339	$1.2279	$1.1151	$1.1251	$1.1353
Raw Water Cost O&M Cost Including Return	$107,200	$113,100	$119,300	$125,800	$132,600	$82,600	$93,000	$86,800	$89,000	$91,300
Raw Water Debt Service	$30,600	$31,100	$31,600	$32,100	$32,600	$27,700	$29,400	$25,800	$25,600	$25,400
Total Raw Water Costs	$137,800	$144,200	$150,900	$157,900	$165,200	$110,300	$122,400	$112,600	$114,600	$116,700
Raw Water Cost ($/1000 gallons)	$0.5207	$0.5141	$0.5075	$0.5010	$0.4945	$0.3115	$0.2484	$0.2285	$0.2325	$0.2368

Year 1 - 5 Average Water Cost	$/1000 gal
Treated Water Costs	$1.9134
Raw Water Costs	$0.5076

Year 6 - 10 Average Water Cost	$/1000 gal
Treated Water Costs	$1.2075
Raw Water Costs	$0.2515

With Milan Industrial User, No Grants
No Phase 1 & 2 Capital

Appendix D
Scenario 4

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water O&M Cost Including Return	$862,700	$888,700	$915,900	$944,200	$973,800	$1,004,900	$1,037,100	$1,071,100	$1,106,500	$1,143,300
Treated Water Debt Service	$333,400	$333,600	$333,800	$334,100	$334,300	$334,500	$334,800	$335,000	$335,200	$335,500
Total Treated Water Costs	$1,196,100	$1,222,300	$1,249,700	$1,278,300	$1,308,100	$1,339,400	$1,371,900	$1,406,100	$1,441,700	$1,478,800
Treated Water Cost ($/1000 gallons)	$1.1456	$1.1562	$1.1671	$1.1781	$1.1894	$1.2010	$1.2125	$1.2246	$1.2367	$1.2489
Raw Water Cost O&M Cost Including Return	$93,600	$96,000	$98,400	$100,900	$103,400	$106,000	$108,700	$111,400	$114,100	$116,900
Raw Water Debt Service	$25,200	$25,000	$24,800	$24,500	$24,300	$24,100	$23,800	$23,600	$23,400	$23,100
Total Raw Water Costs	$118,800	$121,000	$123,200	$125,400	$127,700	$130,100	$132,500	$135,000	$137,500	$140,000
Raw Water Cost ($/1000 gallons)	$0.2411	$0.2455	$0.2500	$0.2545	$0.2591	$0.2640	$0.2689	$0.2739	$0.2790	$0.2841

Year 11 - 15 Average Water Cost	$/1000 gal
Treated Water Costs	$1.1673
Raw Water Costs	$0.2500

Year 16 - 20 Average Water Cost	$/1000 gal
Treated Water Costs	$1.2247
Raw Water Costs	$0.2740

With Milan Industrial User, No Grants
No Phase 1 & 2 Capital

Appendix D
Scenario 4

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2024	2025	2026	2027	2028
Treated Water O&M Cost Including Return	$1,181,800	$1,221,900	$1,264,200	$1,308,200	$1,354,300
Treated Water Debt Service	$335,800	$336,000	$336,300	$336,600	$336,900
Total Treated Water Costs	$1,517,600	$1,557,900	$1,600,500	$1,644,800	$1,691,200
Treated Water Cost ($/1000 gallons)	$1.2614	$1.2738	$1.2867	$1.2997	$1.3128

Raw Water Cost O&M Cost Including Return	$119,700	$122,600	$125,500	$128,500	$131,500
Raw Water Debt Service	$22,800	$22,600	$22,300	$22,000	$21,700
Total Raw Water Costs	$142,500	$145,200	$147,800	$150,500	$153,200
Raw Water Cost ($/1000 gallons)	$0.2892	$0.2946	$0.2999	$0.3054	$0.3109

Year 21 - 25 Average Water Cost	$/1000 gal
Treated Water Costs	$1.2869
Raw Water Costs	$0.3000

Appendix D
Scenario 4

Table 2
North Central Missouri Regional Water Commission
Inputs and Assumptions

Starting Year	2004

Water Plant Capital

Milan Plant Purchase Capital Requirement	$3,564,500
Milan Plant Purchase Additional Capital	$482,200
Milan Plant Purchase Grant Funding	$0
Milan Plant Purchase Capital less Grants	$4,046,700

Supplemental Pipeline & Intake Capital Requirement	$1,136,000
Pipeline & Intake Grant Funding	$0
Pipeline & Intake Capital less Grants	$1,136,000

Interest Rate for Debt Financing	4.75%
Term of Project Financing - years	25

Phase 1 Capital

Investment Year	2005
Dam and Reservoir Construction Capital	$0
Dam Construction Grant Funding	$0
Dam Construction Capital less Grants	$0
Interest Rate for Debt Financing	5.00%
Term of Project Financing - years	25

Phase 2 Capital

Investment Year	2020
Dam and Reservoir Construction Capital	$0
Dam Construction Grant Funding	$0
Dam Construction Capital less Grants	$0
Interest Rate for Debt Financing	5.00%
Term of Project Financing - years	25

Plant O&M

Inflation Rate for Labor/Materials	4.0%
Inflation Rate for Energy	2.5%
Energy Unit Cost ($/kWh)	$0.0690
Average Monthly Energy Use (kWh)	55,000
Demand Charge ($/kW)	$206
Average Demand (kW)	8.50
Other Utility Costs (Gas?)	20,000
Plant Labor	$109,100
City Labor Offset (10%)	-$10,900
Routine Maintenance (1% of Plant Capital)	$35,600
Chemical Costs per Thousand Gallons	$0.275
General and Administration Expenses	$125,000
Lake Lease per Thousand Gallons	$0.150
Renewal & Replacement Fund Requirement	$20,000

Dam & Reservoir O&M

Phase 1	$0
Phase 2	$0

Water Usage

Milan Treated Water	0.350	[1]
Sullivan County #1 Treated Water	0.328	[1]
Green City Treated Water	0.094	[1]
Milan Industrial User Treated Water	0.363	[1]
Other Treated Water Customers (Begin 2011)	0.490	
PSF Raw Water	0.725	[1]
Milan Water Usage Growth	0.70%	
Sullivan County #1 Water Usage Growth	1.30%	
Green City Water Usage Growth	0.25%	
Raw Water Usage Growth (first 10 years)	6.00%	
Raw Water Usage Growth (after 2010)	0.00%	
Milan Industrial User Water Usage Growth	8.00%	
Milan Industrial User Water Usage Growth (after 2010)	0.00%	
Other Treated Water Growth	5.00%	

Return

Return (% of O&M expense, Years 1-5)	5%
Return (% of O&M expense, Years10 and beyond)	10%

[1] 2002 Average MGD

Appendix D
Scenario 4

Table 3
North Central Missouri Regional Water Commission
Forecast of Operation and Maintenance Expenses

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Treated Water Flow (MGY)	414	427	441	456	472	649	826	1,008	1,019	1,032
Raw Water Flow (MGY)	265	281	297	315	334	354	493	493	493	493
Total Water Flow (MGY)	679	708	739	771	806	1,003	1,319	1,501	1,512	1,524
Plant O&M Expenses										
Labor & Burden	$98,200	$102,100	$106,200	$110,400	$114,800	$119,400	$124,200	$129,200	$134,400	$139,800
General & Administrative	$125,000	$130,000	$135,200	$140,600	$146,200	$152,000	$158,100	$164,400	$171,000	$177,800
Electricity Costs	$47,300	$49,900	$52,900	$56,000	$59,400	$82,900	$107,700	$134,200	$139,100	$144,300
Other Utility Costs	$20,000	$20,800	$21,600	$22,500	$23,400	$24,300	$25,300	$26,300	$27,400	$28,500
Routine Maintenance	$35,600	$37,000	$38,500	$40,000	$41,600	$43,300	$45,000	$46,800	$48,700	$50,600
Chemicals	$113,900	$117,500	$121,300	$125,400	$129,800	$176,500	$227,200	$277,100	$280,300	$283,700
Lake Lease	$101,800	$106,200	$110,800	$115,700	$120,900	$0	$0	$0	$0	$0
R&R Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
Phase 1 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Phase 2 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total O&M Costs	$561,800	$583,500	$606,500	$630,600	$656,100	$620,400	$707,500	$798,000	$820,900	$844,700
Return	$28,100	$29,200	$30,300	$31,500	$32,800	$62,000	$70,800	$79,800	$82,100	$84,500
Total Annual Costs	$589,900	$612,700	$636,800	$662,100	$688,900	$682,400	$778,300	$877,800	$903,000	$929,200
Allocated O&M including Return to Treated Water	$482,700	$499,600	$517,500	$536,300	$556,300	$599,800	$685,300	$791,000	$814,000	$837,900
Allocated O&M including Return to Raw Water	$107,200	$113,100	$119,300	$125,800	$132,600	$82,600	$93,000	$86,800	$89,000	$91,300

With Milan Industrial User, No Grants
No Phase 1 & 2 Capital

Appendix D
Scenario 4

Table 3
North Central Missouri Regional Water Commission
Forecast of Operation and Maintenance Expenses

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water Flow (MGY)	1,044	1,057	1,071	1,085	1,100	1,115	1,131	1,148	1,166	1,184
Raw Water Flow (MGY)	493	493	493	493	493	493	493	493	493	493
Total Water Flow (MGY)	1,537	1,550	1,564	1,578	1,593	1,608	1,624	1,641	1,659	1,677
Plant O&M Expenses										
Labor & Burden	$145,400	$151,200	$157,200	$163,500	$170,000	$176,800	$183,900	$191,300	$199,000	$207,000
General & Administrative	$184,900	$192,300	$200,000	$208,000	$216,300	$225,000	$234,000	$243,400	$253,100	$263,200
Electricity Costs	$149,800	$155,500	$161,500	$167,700	$174,300	$181,300	$188,500	$196,200	$204,200	$212,600
Other Utility Costs	$29,600	$30,800	$32,000	$33,300	$34,600	$36,000	$37,400	$38,900	$40,500	$42,100
Routine Maintenance	$52,600	$54,700	$56,900	$59,200	$61,600	$64,100	$66,700	$69,400	$72,200	$75,100
Chemicals	$287,100	$290,700	$294,500	$298,400	$302,500	$306,700	$311,100	$315,800	$320,600	$325,600
Lake Lease	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
R&R Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
Phase 1 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Phase 2 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total O&M Costs	$869,400	$895,200	$922,100	$950,100	$979,300	$1,009,900	$1,041,600	$1,075,000	$1,109,600	$1,145,600
Return	$86,900	$89,500	$92,200	$95,000	$97,900	$101,000	$104,200	$107,500	$111,000	$114,600
Total Annual Costs	$956,300	$984,700	$1,014,300	$1,045,100	$1,077,200	$1,110,900	$1,145,800	$1,182,500	$1,220,600	$1,260,200
Allocated O&M including Return to Treated Water	$862,700	$888,700	$915,900	$944,200	$973,800	$1,004,900	$1,037,100	$1,071,100	$1,106,500	$1,143,300
Allocated O&M including Return to Raw Water	$93,600	$96,000	$98,400	$100,900	$103,400	$106,000	$108,700	$111,400	$114,100	$116,900

With Milan Industrial User, No Grants
No Phase 1 & 2 Capital

Appendix D
Scenario 4

Table 3
North Central Missouri Regional Water Commission
Forecast of Operation and Maintenance Expenses

Year	2024	2025	2026	2027	2028	Total
Treated Water Flow (MGY)	1,203	1,223	1,244	1,266	1,288	
Raw Water Flow (MGY)	493	493	493	493	493	
Total Water Flow (MGY)	1,696	1,716	1,737	1,758	1,781	
Plant O&M Expenses						
Labor & Burden	$215,300	$223,900	$232,900	$242,200	$251,900	$4,090,200
General & Administrative	$273,700	$284,600	$296,000	$307,800	$320,100	$5,202,700
Electricity Costs	$221,400	$230,700	$240,600	$251,000	$261,800	$3,870,800
Other Utility Costs	$43,800	$45,600	$47,400	$49,300	$51,300	$832,700
Routine Maintenance	$78,100	$81,200	$84,400	$87,800	$91,300	$1,482,400
Chemicals	$330,900	$336,300	$342,100	$348,000	$354,300	$6,619,300
Lake Lease	$0	$0	$0	$0	$0	$555,400
R&R Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$500,000
Phase 1 Dam O&M	$0	$0	$0	$0	$0	$0
Phase 2 Dam O&M	$0	$0	$0	$0	$0	$0
Total O&M Costs	$1,183,200	$1,222,300	$1,263,400	$1,306,100	$1,350,700	$23,153,500
Return	$118,300	$122,200	$126,300	$130,600	$135,100	$2,163,400
Total Annual Costs	$1,301,500	$1,344,500	$1,389,700	$1,436,700	$1,485,800	$25,316,900
Allocated O&M Including Return to Treated Water	$1,181,800	$1,221,900	$1,264,200	$1,308,200	$1,354,300	$22,599,000
Allocated O&M Including Return to Raw Water	$119,700	$122,600	$125,500	$128,500	$131,500	$2,717,900

Appendix D
Scenario 4

Table 4
North Central Missouri Regional Water Commission
Forecast Energy Expenses

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Energy Unit Cost ($/kWh)	$0.0690	0.0707	0.0725	0.0743	0.0762	0.0781	0.0800	0.0820	0.0841	0.0862
Annual Energy Usage (kWh)	660,000	680,800	703,000	726,700	752,000	1,034,100	1,316,300	1,605,600	1,624,200	1,643,400
Annual Energy Cost	$45,500	$48,100	$51,000	$54,000	$57,300	$80,700	$105,300	$131,700	$136,500	$141,600
Monthly Demand Charge ($KW)	$206.00	211.15	216.43	221.84	227.39	233.07	238.90	244.87	250.99	257.27
Monthly Peak Demand	8.50	8.71	8.93	9.15	9.38	9.62	9.86	10.10	10.36	10.62
Annual Demand Cost	$1,800	$1,800	$1,900	$2,000	$2,100	$2,200	$2,400	$2,500	$2,600	$2,700
Treated Water Electric Cost	$47,300	$49,900	$52,900	$56,000	$59,400	$82,900	$107,700	$134,200	$139,100	$144,300
Raw Water Electric Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Calculated Electric Cost	$47,300	$49,900	$52,900	$56,000	$59,400	$82,900	$107,700	$134,200	$139,100	$144,300
Total Electric Cost	$47,300	$49,900	$52,900	$56,000	$59,400	$82,900	$107,700	$134,200	$139,100	$144,300
Allocated Treated Water	$47,300	$49,900	$52,900	$56,000	$59,400	$82,900	$107,700	$134,200	$139,100	$144,300
Allocated Raw Water	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Appendix D
Scenario 4

Table 4
North Central Missouri Regional Water Commission
Forecast Energy Expenses

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Energy Unit Cost ($/kWh)	0.0883	0.0905	0.0928	0.0951	0.0975	0.0999	0.1024	0.1050	0.1076	0.1103
Annual Energy Usage (kWh)	1,663,400	1,684,300	1,706,000	1,728,600	1,752,200	1,776,800	1,802,600	1,829,400	1,857,300	1,886,400
Annual Energy Cost	$146,900	$152,500	$158,300	$164,400	$170,800	$177,600	$184,600	$192,100	$199,900	$208,100
Monthly Demand Charge ($KW)	263.70	270.29	277.05	283.97	291.07	298.35	305.81	313.45	321.29	329.32
Monthly Peak Demand	10.88	11.15	11.43	11.72	12.01	12.31	12.62	12.93	13.26	13.59
Annual Demand Cost	$2,900	$3,000	$3,200	$3,300	$3,500	$3,700	$3,900	$4,100	$4,300	$4,500
Treated Water Electric Cost	$149,800	$155,500	$161,500	$167,700	$174,300	$181,300	$188,500	$196,200	$204,200	$212,600
Raw Water Electric Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Calculated Electric Cost	$149,800	$155,500	$161,500	$167,700	$174,300	$181,300	$188,500	$196,200	$204,200	$212,600
Total Electric Cost	$149,800	$155,500	$161,500	$167,700	$174,300	$181,300	$188,500	$196,200	$204,200	$212,600
Allocated Treated Water	$149,800	$155,500	$161,500	$167,700	$174,300	$181,300	$188,500	$196,200	$204,200	$212,600
Allocated Raw Water	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Appendix D
Scenario 4

Table 4
North Central Missouri Regional Water Commission
Forecast Energy Expenses

Year	2024	2025	2026	2027	2028
Energy Unit Cost ($/kWh)	0.1131	0.1159	0.1188	0.1218	0.1248
Annual Energy Usage (kWh)	1,916,800	1,948,500	1,981,600	2,016,200	2,052,300
Annual Energy Cost	$216,700	$225,800	$235,400	$245,500	$256,100
Monthly Demand Charge ($KW)	337.55	345.99	354.64	363.51	372.60
Monthly Peak Demand	13.93	14.28	14.63	15.00	15.37
Annual Demand Cost	$4,700	$4,900	$5,200	$5,500	$5,700
Treated Water Electric Cost	$221,400	$230,700	$240,600	$251,000	$261,800
Raw Water Electric Cost	$0	$0	$0	$0	$0
Calculated Electric Cost	$221,400	$230,700	$240,600	$251,000	$261,800
Total Electric Cost	$221,400	$230,700	$240,600	$251,000	$261,800
Allocated Treated Water	$221,400	$230,700	$240,600	$251,000	$261,800
Allocated Raw Water	$0	$0	$0	$0	$0

Appendix D
Scenario 4

Table 5
North Central Missouri Regional Water Commission
Projected Debt Expense

Year	Investment	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Plant Investment	$4,046,700										
Initial Debt Service Payment		$280,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000
Initial Debt Service Interest		$192,200	$188,000	$183,700	$179,100	$174,300	$169,300	$164,000	$158,500	$152,800	$146,700
Initial Debt Service Principle		$87,800	$91,900	$96,300	$100,900	$105,700	$110,700	$115,900	$121,400	$127,200	$133,200
Remaining Capital Balance - EOY		$3,958,900	$3,867,000	$3,770,700	$3,669,800	$3,564,100	$3,453,400	$3,337,500	$3,216,100	$3,088,900	$2,955,700
Supplemental Pipeline & Intake	$1,136,000										
Initial Debt Service Payment		$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600
Initial Debt Service Interest		$54,000	$52,800	$51,600	$50,300	$48,900	$47,500	$46,100	$44,500	$42,900	$41,200
Initial Debt Service Principle		$24,600	$25,800	$27,000	$28,300	$29,700	$31,100	$32,500	$34,100	$35,700	$37,400
Remaining Capital Balance - EOY		$1,111,400	$1,085,600	$1,058,600	$1,030,300	$1,000,600	$969,500	$937,000	$902,900	$867,200	$829,800
Phase 1 Dam Investment	$0										
Dam Debt Service Payment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Interest		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Principle		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Remaining Capital Balance - EOY		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

With Milan Industrial User, No Grants
No Phase 1 & 2 Capital

Appendix D
Scenario 4

Table 5
North Central Missouri Regional Water Commission
Projected Debt Expense

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Plant Investment										
Initial Debt Service Payment	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000	$280,000
Initial Debt Service Interest	$140,400	$133,800	$126,800	$119,500	$111,900	$103,900	$95,600	$86,800	$77,700	$68,000
Initial Debt Service Principle	$139,600	$146,200	$153,100	$160,400	$168,000	$176,000	$184,400	$193,100	$202,300	$211,900
Remaining Capital Balance - EOY	$2,816,100	$2,669,900	$2,516,800	$2,356,400	$2,188,400	$2,012,400	$1,828,000	$1,634,900	$1,432,600	$1,220,700
Supplemental Pipeline & Intake										
Initial Debt Service Payment	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600
Initial Debt Service Interest	$39,400	$37,600	$35,600	$33,600	$31,400	$29,200	$26,800	$24,400	$21,800	$19,100
Initial Debt Service Principle	$39,200	$41,000	$43,000	$45,000	$47,200	$49,400	$51,800	$54,200	$56,800	$59,500
Remaining Capital Balance - EOY	$790,600	$749,600	$706,600	$661,600	$614,400	$565,000	$513,200	$459,000	$402,200	$342,700
Phase 1 Dam Investment										
Dam Debt Service Payment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Interest	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Principle	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Remaining Capital Balance - EOY	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Appendix D
Scenario 4

Table 5
North Central Missouri Regional Water Commission
Projected Debt Expense

Year	2024	2025	2026	2027	2028	Total
Plant Investment						
Initial Debt Service Payment	$280,000	$280,000	$280,000	$280,000	$280,000	$7,000,000
Initial Debt Service Interest	$58,000	$47,400	$36,400	$24,800	$12,700	$2,952,300
Initial Debt Service Principle	$222,000	$232,500	$243,600	$255,200	$267,300	$4,046,600
Remaining Capital Balance - EOY	$998,700	$766,200	$522,600	$267,400	$100	
Supplemental Pipeline & Intake						
Initial Debt Service Payment	$78,600	$78,600	$78,600	$78,600	$78,600	$1,965,000
Initial Debt Service Interest	$16,300	$13,300	$10,200	$7,000	$3,600	$829,100
Initial Debt Service Principle	$62,300	$65,300	$68,400	$71,600	$75,000	$1,135,900
Remaining Capital Balance - EOY	$280,400	$215,100	$146,700	$75,100	$100	
Phase 1 Dam Investment						
Dam Debt Service Payment	$0	$0	$0	$0	$0	$0
Dam Debt Service Interest	$0	$0	$0	$0	$0	$0
Dam Debt Service Principle	$0	$0	$0	$0	$0	$0
Remaining Capital Balance - EOY	$0	$0	$0	$0	$0	

Appendix D
Scenario 4

Table 6
North Central Missouri Regional Water Commission
Projected Water Sales

Type	Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Treated Water	Milan	127.8	128.6	129.5	130.5	131.4	132.3	133.2	134.1	135.1	136.0
	Sullivan County #1	119.7	121.3	122.9	124.5	126.1	127.7	129.4	131.0	132.8	134.5
	Green City	34.3	34.3	34.3	34.3	34.3	34.3	34.3	34.3	34.4	34.4
	Milan Industrial User	132.5	143.1	154.5	166.9	180.3	354.8	529.3	529.3	529.3	529.3
	Other Treated Water Cust.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	179.0	187.9	197.3
Total Treated Water		414.3	427.3	441.2	456.1	472.0	649.1	826.2	1,007.8	1,019.4	1,031.5
Raw Water	PSF	264.6	280.5	297.3	315.2	334.1	354.1	492.8	492.8	492.8	492.8
Total Water		678.9	707.8	738.6	771.3	806.1	1,003.2	1,319.0	1,500.6	1,512.2	1,524.3
Percent Treated Water		61.0%	60.4%	59.7%	59.1%	58.6%	64.7%	62.6%	67.2%	67.4%	67.7%
Percent Raw Water		39.0%	39.6%	40.3%	40.9%	41.4%	35.3%	37.4%	32.8%	32.6%	32.3%

Appendix D
Scenario 4

Table 6
North Central Missouri Regional Water Commission
Projected Water Sales

Type	Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water	Milan	137.0	137.9	138.9	139.9	140.9	141.8	142.8	143.8	144.8	145.9
	Sullivan County #1	136.2	138.0	139.8	141.6	143.4	145.3	147.2	149.1	151.1	153.0
	Green City	34.4	34.4	34.4	34.4	34.4	34.4	34.5	34.5	34.5	34.5
	Milan Industrial User	529.3	529.3	529.3	529.3	529.3	529.3	529.3	529.3	529.3	529.3
	Other Treated Water Cust.	207.2	217.5	228.4	239.8	251.8	264.4	277.6	291.5	306.1	321.4
Total Treated Water		1,044.1	1,057.2	1,070.8	1,085.0	1,099.8	1,115.3	1,131.5	1,148.2	1,165.8	1,184.0
Raw Water	PSF	492.8	492.8	492.8	492.8	492.8	492.8	492.8	492.8	492.8	492.8
Total Water		1,536.9	1,550.0	1,563.6	1,577.8	1,592.6	1,608.1	1,624.3	1,641.0	1,658.6	1,676.8
Percent Treated Water		67.9%	68.2%	68.5%	68.8%	69.1%	69.4%	69.7%	70.0%	70.3%	70.6%
Percent Raw Water		32.1%	31.8%	31.5%	31.2%	30.9%	30.6%	30.3%	30.0%	29.7%	29.4%

Appendix D
Scenario 4

Table 6
North Central Missouri Regional Water Commission
Projected Water Sales

Type	Year	2024	2025	2026	2027	2028
Treated Water	Milan	146.9	147.9	148.9	150.0	151.0
	Sullivan County #1	155.0	157.0	159.1	161.1	163.2
	Green City	34.5	34.5	34.5	34.5	34.5
	Milan Industrial User	529.3	529.3	529.3	529.3	529.3
	Other Treated Water Cust.	337.5	354.3	372.1	390.7	410.2
Total Treated Water		1,203.1	1,223.0	1,243.8	1,265.6	1,288.2
Raw Water	PSF	492.8	492.8	492.8	492.8	492.8
Total Water		1,695.9	1,715.8	1,736.6	1,758.4	1,781.0
Percent Treated Water		70.9%	71.3%	71.6%	72.0%	72.3%
Percent Raw Water		29.1%	28.7%	28.4%	28.0%	27.7%

APPENDIX E

SCENARIO 5 – WITH MILAN INDUSTRIAL USER, WITH 30% PLANT GRANT

Appendix E
Scenario 5

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Treated Water O&M Cost Including Return	$482,700	$499,600	$517,500	$536,300	$556,300	$599,800	$685,300	$791,000	$814,000	$837,900
Treated Water Debt Service	$244,000	$243,500	$243,000	$242,500	$242,000	$246,900	$245,200	$248,800	$249,000	$249,200
Total Treated Water Costs	$726,700	$743,100	$760,500	$778,800	$798,300	$846,700	$930,500	$1,039,800	$1,063,000	$1,087,100
Treated Water Cost ($/1000 gallons)	$1.7541	$1.7390	$1.7235	$1.7075	$1.6913	$1.3045	$1.1263	$1.0318	$1.0427	$1.0539
Raw Water Cost O&M Cost Including Return	$107,200	$113,100	$119,300	$125,800	$132,600	$82,600	$93,000	$86,800	$89,000	$91,300
Raw Water Debt Service	$30,600	$31,100	$31,600	$32,100	$32,600	$27,700	$29,400	$25,800	$25,600	$25,400
Total Raw Water Costs	$137,800	$144,200	$150,900	$157,900	$165,200	$110,300	$122,400	$112,600	$114,600	$116,700
Raw Water Cost ($/1000 gallons)	$0.5207	$0.5141	$0.5075	$0.5010	$0.4945	$0.3115	$0.2484	$0.2285	$0.2325	$0.2368

Year 1 - 5 Average Water Cost	$/1000 gal
Treated Water Costs	$1.7231
Raw Water Costs	$0.5076

Year 6 - 10 Average Water Cost	$/1000 gal
Treated Water Costs	$1.1118
Raw Water Costs	$0.2515

With Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

Appendix E
Scenario 5

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water O&M Cost Including Return	$862,700	$888,700	$915,900	$944,200	$973,800	$1,004,900	$1,037,100	$1,071,100	$1,106,500	$1,143,300
Treated Water Debt Service	$249,400	$249,600	$249,800	$250,100	$250,300	$250,500	$250,800	$251,000	$251,200	$251,500
Total Treated Water Costs	$1,112,100	$1,138,300	$1,165,700	$1,194,300	$1,224,100	$1,255,400	$1,287,900	$1,322,100	$1,357,700	$1,394,800
Treated Water Cost ($/1000 gallons)	$1.0652	$1.0768	$1.0886	$1.1007	$1.1130	$1.1257	$1.1383	$1.1514	$1.1646	$1.1780
Raw Water Cost O&M Cost Including Return	$93,600	$96,000	$98,400	$100,900	$103,400	$106,000	$108,700	$111,400	$114,100	$116,900
Raw Water Debt Service	$25,200	$25,000	$24,800	$24,500	$24,300	$24,100	$23,800	$23,600	$23,400	$23,100
Total Raw Water Costs	$118,800	$121,000	$123,200	$125,400	$127,700	$130,100	$132,500	$135,000	$137,500	$140,000
Raw Water Cost ($/1000 gallons)	$0.2411	$0.2455	$0.2500	$0.2545	$0.2591	$0.2640	$0.2689	$0.2739	$0.2790	$0.2841

Year 11 - 15 Average Water Cost	$/1000 gal
Treated Water Costs	$1.0889
Raw Water Costs	$0.2500

Year 16 - 20 Average Water Cost	$/1000 gal
Treated Water Costs	$1.1516
Raw Water Costs	$0.2740

Appendix E
Scenario 5

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2024	2025	2026	2027	2028
Treated Water O&M Cost Including Return	$1,181,800	$1,221,900	$1,264,200	$1,308,200	$1,354,300
Treated Water Debt Service	$251,800	$252,000	$252,300	$252,600	$252,900
Total Treated Water Costs	$1,433,600	$1,473,900	$1,516,500	$1,560,800	$1,607,200
Treated Water Cost ($/1000 gallons)	$1.1916	$1.2051	$1.2192	$1.2333	$1.2476
Raw Water Cost O&M Cost Including Return	$119,700	$122,600	$125,500	$128,500	$131,500
Raw Water Debt Service	$22,800	$22,600	$22,300	$22,000	$21,700
Total Raw Water Costs	$142,500	$145,200	$147,800	$150,500	$153,200
Raw Water Cost ($/1000 gallons)	$0.2892	$0.2946	$0.2999	$0.3054	$0.3109

Year 21 - 25 Average Water Cost	$/1000 gal
Treated Water Costs	$1.2194
Raw Water Costs	$0.3000

With Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

Appendix E
Scenario 5

Table 2
North Central Missouri Regional Water Commission
Inputs and Assumptions

Starting Year	2004

Water Plant Capital

Milan Plant Purchase Capital Requirement	$3,564,600
Milan Plant Purchase Additional Capital	$482,200
Milan Plant Purchase Grant Funding	$1,214,010
Milan Plant Purchase Capital less Grants	$2,832,890
Supplemental Pipeline & Intake Capital Requirement	$1,136,000
Pipeline & Intake Grant Funding	$0
Pipeline & Intake Capital less Grants	$1,136,000
Interest Rate for Debt Financing	4.75%
Term of Project Financing - years	25

Phase 1 Capital

Investment Year	2005
Dam and Reservoir Construction Capital	$0
Dam Construction Grant Funding	$0
Dam Construction Capital less Grants	$0
Interest Rate for Debt Financing	5.00%
Term of Project Financing - years	25

Phase 2 Capital

Investment Year	2020
Dam and Reservoir Construction Capital	$0
Dam Construction Grant Funding	$0
Dam Construction Capital less Grants	$0
Interest Rate for Debt Financing	6.00%
Term of Project Financing - years	25

Plant O&M

Inflation Rate for Labor/Materials	4.0%
Inflation Rate for Energy	2.5%
Energy Unit Cost ($/kWh)	$0.0690
Average Monthly Energy Use (kWh)	55,000
Demand Charge ($/kW)	$206
Average Demand (kW)	8.50
Other Utility Costs (Gas?)	20,000
Plant Labor	$109,100
City Labor Offset (10%)	-$10,900
Routine Maintenance (1% of Plant Capital)	$35,600
Chemical Costs per Thousand Gallons	$0.275
General and Administration Expenses	$125,000
Lake Lease per Thousand Gallons	$0.150
Renewal & Replacement Fund Requirement	$20,000

Dam & Reservoir O&M

Phase 1	$0
Phase 2	$0

Water Usage

Milan Treated Water	0.350	[1]
Sullivan County #1 Treated Water	0.328	[1]
Green City Treated Water	0.094	[1]
Milan Industrial User Treated Water	0.363	[1]
Other Treated Water Customers (Begin 2011)	0.490	
PSF Raw Water	0.725	[1]
Milan Water Usage Growth	0.70%	
Sullivan County #1 Water Usage Growth	1.30%	
Green City Water Usage Growth	0.25%	
Raw Water Usage Growth (first 10 years)	6.00%	
Raw Water Usage Growth (after 2010)	0.00%	
Milan Industrial User Water Usage Growth	6.00%	
Milan Industrial User Water Usage Growth (after 2010)	0.00%	
Other Treated Water Growth	5.00%	

Return

Return (% of O&M expense, Years 1-5)	5%
Return (% of O&M expense, Years10 and beyond)	10%

[1] 2002 Average MGD

Appendix E
Scenario 5

Table 3
North Central Missouri Regional Water Commission
Forecast of Operation and Maintenance Expenses

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Treated Water Flow (MGY)	414	427	441	456	472	649	826	1,008	1,019	1,032
Raw Water Flow (MGY)	265	281	297	315	334	354	493	493	493	493
Total Water Flow (MGY)	679	708	739	771	806	1,003	1,319	1,501	1,512	1,524
Plant O&M Expenses										
Labor & Burden	$98,200	$102,100	$106,200	$110,400	$114,800	$119,400	$124,200	$129,200	$134,400	$139,800
General & Administrative	$125,000	$130,000	$135,200	$140,600	$146,200	$152,000	$158,100	$164,400	$171,000	$177,800
Electricity Costs	$47,300	$49,900	$52,900	$56,000	$59,400	$82,900	$107,700	$134,200	$139,100	$144,300
Other Utility Costs	$20,000	$20,800	$21,600	$22,500	$23,400	$24,300	$25,300	$26,300	$27,400	$28,500
Routine Maintenance	$35,600	$37,000	$38,500	$40,000	$41,600	$43,300	$45,000	$46,800	$48,700	$50,600
Chemicals	$113,900	$117,500	$121,300	$125,400	$129,800	$178,500	$227,200	$277,100	$280,300	$283,700
Lake Lease	$101,800	$106,200	$110,800	$115,700	$120,900	$0	$0	$0	$0	$0
R&R Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
Phase 1 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Phase 2 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total O&M Costs	$561,800	$583,500	$606,500	$630,600	$656,100	$620,400	$707,500	$798,000	$820,900	$844,700
Return	$28,100	$29,200	$30,300	$31,500	$32,800	$62,000	$70,800	$79,800	$82,100	$84,500
Total Annual Costs	$589,900	$612,700	$636,800	$662,100	$688,900	$682,400	$778,300	$877,800	$903,000	$929,200
Allocated O&M including Return to Treated Water	$482,700	$499,600	$517,500	$536,300	$556,300	$599,800	$685,300	$791,000	$814,000	$837,900
Allocated O&M including Return to Raw Water	$107,200	$113,100	$119,300	$125,800	$132,600	$82,600	$93,000	$86,800	$89,000	$91,300

With Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

Appendix E
Scenario 5

Table 3
North Central Missouri Regional Water Commission
Forecast of Operation and Maintenance Expenses

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water Flow (MGY)	1,044	1,057	1,071	1,085	1,100	1,115	1,131	1,148	1,166	1,184
Raw Water Flow (MGY)	493	493	493	493	493	493	493	493	493	493
Total Water Flow (MGY)	1,537	1,550	1,564	1,578	1,593	1,608	1,624	1,641	1,659	1,677
Plant O&M Expenses										
Labor & Burden	$145,400	$151,200	$157,200	$163,500	$170,000	$176,800	$183,900	$191,300	$199,000	$207,000
General & Administrative	$184,900	$192,300	$200,000	$208,000	$216,300	$225,000	$234,000	$243,400	$253,100	$263,200
Electricity Costs	$149,800	$155,500	$161,500	$167,700	$174,300	$181,300	$188,500	$196,200	$204,200	$212,600
Other Utility Costs	$29,600	$30,800	$32,000	$33,300	$34,600	$36,000	$37,400	$38,900	$40,500	$42,100
Routine Maintenance	$52,600	$54,700	$56,900	$59,200	$61,600	$64,100	$66,700	$69,400	$72,200	$75,100
Chemicals	$287,100	$290,700	$294,500	$298,400	$302,500	$306,700	$311,100	$315,800	$320,600	$325,600
Lake Lease	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
R&R Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
Phase 1 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Phase 2 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total O&M Costs	$869,400	$895,200	$922,100	$950,100	$979,300	$1,009,900	$1,041,600	$1,075,000	$1,109,600	$1,145,600
Return	$86,900	$89,500	$92,200	$95,000	$97,900	$101,000	$104,200	$107,500	$111,000	$114,600
Total Annual Costs	$956,300	$984,700	$1,014,300	$1,045,100	$1,077,200	$1,110,900	$1,145,800	$1,182,500	$1,220,600	$1,260,200
Allocated O&M including Return to Treated Water	$862,700	$888,700	$915,900	$944,200	$973,800	$1,004,900	$1,037,100	$1,071,100	$1,106,500	$1,143,300
Allocated O&M including Return to Raw Water	$93,600	$96,000	$98,400	$100,900	$103,400	$106,000	$108,700	$111,400	$114,100	$116,900

With Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

Appendix E
Scenario 5

Table 3
North Central Missouri Regional Water Commission
Forecast of Operation and Maintenance Expenses

Year	2024	2025	2026	2027	2028	Total
Treated Water Flow (MGY)	1,203	1,223	1,244	1,266	1,288	
Raw Water Flow (MGY)	493	493	493	493	493	
Total Water Flow (MGY)	1,696	1,716	1,737	1,758	1,781	
Plant O&M Expenses						
Labor & Burden	$215,300	$223,900	$232,900	$242,200	$251,900	$4,090,200
General & Administrative	$273,700	$284,600	$296,000	$307,800	$320,100	$5,202,700
Electricity Costs	$221,400	$230,700	$240,600	$251,000	$261,800	$3,870,800
Other Utility Costs	$43,800	$45,600	$47,400	$49,300	$51,300	$832,700
Routine Maintenance	$78,100	$81,200	$84,400	$87,800	$91,300	$1,482,400
Chemicals	$330,900	$336,300	$342,100	$348,000	$354,300	$6,619,300
Lake Lease	$0	$0	$0	$0	$0	$555,400
R&R Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$500,000
Phase 1 Dam O&M	$0	$0	$0	$0	$0	$0
Phase 2 Dam O&M	$0	$0	$0	$0	$0	$0
Total O&M Costs	$1,183,200	$1,222,300	$1,263,400	$1,306,100	$1,350,700	$23,153,500
Return	$118,300	$122,200	$126,300	$130,600	$135,100	$2,163,400
Total Annual Costs	$1,301,500	$1,344,500	$1,389,700	$1,436,700	$1,485,800	$25,316,900
Allocated O&M including Return to Treated Water	$1,181,800	$1,221,900	$1,264,200	$1,308,200	$1,354,300	$22,599,000
Allocated O&M including Return to Raw Water	$119,700	$122,600	$125,500	$128,500	$131,500	$2,717,900

With Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

Appendix E
Scenario 5

Table 4
North Central Missouri Regional Water Commission
Forecast Energy Expenses

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Energy Unit Cost ($/kWh)	$0.0690	0.0707	0.0725	0.0743	0.0762	0.0781	0.0800	0.0820	0.0841	0.0862
Annual Energy Usage (kWh)	660,000	680,800	703,000	726,700	752,000	1,034,100	1,316,300	1,605,600	1,624,200	1,643,400
Annual Energy Cost	$45,500	$48,100	$51,000	$54,000	$57,300	$80,700	$105,300	$131,700	$136,500	$141,600
Monthly Demand Charge ($KW)	$206.00	211.15	216.43	221.84	227.39	233.07	238.90	244.87	250.99	257.27
Monthly Peak Demand	8.50	8.71	8.93	9.15	9.38	9.62	9.86	10.10	10.36	10.62
Annual Demand Cost	$1,800	$1,800	$1,900	$2,000	$2,100	$2,200	$2,400	$2,500	$2,600	$2,700
Treated Water Electric Cost	$47,300	$49,900	$52,900	$56,000	$59,400	$82,900	$107,700	$134,200	$139,100	$144,300
Raw Water Electric Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Calculated Electric Cost	$47,300	$49,900	$52,900	$56,000	$59,400	$82,900	$107,700	$134,200	$139,100	$144,300
Total Electric Cost	$47,300	$49,900	$52,900	$56,000	$59,400	$82,900	$107,700	$134,200	$139,100	$144,300
Allocated Treated Water	$47,300	$49,900	$52,900	$56,000	$59,400	$82,900	$107,700	$134,200	$139,100	$144,300
Allocated Raw Water	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

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Scenario 5

Table 4
North Central Missouri Regional Water Commission
Forecast Energy Expenses

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Energy Unit Cost ($/kWh)	0.0883	0.0905	0.0928	0.0951	0.0975	0.0999	0.1024	0.1050	0.1076	0.1103
Annual Energy Usage (kWh)	1,663,400	1,684,300	1,706,000	1,728,600	1,752,200	1,776,800	1,802,600	1,829,400	1,857,300	1,886,400
Annual Energy Cost	$146,900	$152,500	$158,300	$164,400	$170,800	$177,600	$184,600	$192,100	$199,900	$208,100
Monthly Demand Charge ($KW)	263.70	270.29	277.05	283.97	291.07	298.35	305.81	313.45	321.29	329.32
Monthly Peak Demand	10.88	11.15	11.43	11.72	12.01	12.31	12.62	12.93	13.26	13.59
Annual Demand Cost	$2,900	$3,000	$3,200	$3,300	$3,500	$3,700	$3,900	$4,100	$4,300	$4,500
Treated Water Electric Cost	$149,800	$155,500	$161,500	$167,700	$174,300	$181,300	$188,500	$196,200	$204,200	$212,600
Raw Water Electric Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Calculated Electric Cost	$149,800	$155,500	$161,500	$167,700	$174,300	$181,300	$188,500	$196,200	$204,200	$212,600
Total Electric Cost	$149,800	$155,500	$161,500	$167,700	$174,300	$181,300	$188,500	$196,200	$204,200	$212,600
Allocated Treated Water	$149,800	$155,500	$161,500	$167,700	$174,300	$181,300	$188,500	$196,200	$204,200	$212,600
Allocated Raw Water	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

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Scenario 5

Table 4
North Central Missouri Regional Water Commission
Forecast Energy Expenses

Year	2024	2025	2026	2027	2028
Energy Unit Cost ($/kWh)	0.1131	0.1159	0.1188	0.1218	0.1248
Annual Energy Usage (kWh)	1,916,800	1,948,500	1,981,600	2,016,200	2,052,300
Annual Energy Cost	$216,700	$225,800	$235,400	$245,500	$256,100
Monthly Demand Charge ($KW)	337.55	345.99	354.64	363.51	372.60
Monthly Peak Demand	13.93	14.28	14.63	15.00	15.37
Annual Demand Cost	$4,700	$4,900	$5,200	$5,500	$5,700
Treated Water Electric Cost	$221,400	$230,700	$240,600	$251,000	$261,800
Raw Water Electric Cost	$0	$0	$0	$0	$0
Calculated Electric Cost	$221,400	$230,700	$240,600	$251,000	$261,800
Total Electric Cost	$221,400	$230,700	$240,600	$251,000	$261,800
Allocated Treated Water	$221,400	$230,700	$240,600	$251,000	$261,800
Allocated Raw Water	$0	$0	$0	$0	$0

Appendix E
Scenario 5

Table 5
North Central Missouri Regional Water Commission
Projected Debt Expense

Year	Investment	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Plant Investment	$2,832,690										
Initial Debt Service Payment		$196,000	$196,000	$196,000	$196,000	$196,000	$196,000	$196,000	$196,000	$196,000	$196,000
Initial Debt Service Interest		$134,600	$131,600	$128,600	$125,400	$122,000	$118,500	$114,800	$111,000	$106,900	$102,700
Initial Debt Service Principle		$61,400	$64,300	$67,400	$70,600	$74,000	$77,500	$81,100	$85,000	$89,000	$93,300
Remaining Capital Balance - EOY		$2,771,290	$2,706,990	$2,639,590	$2,568,990	$2,494,990	$2,417,490	$2,336,390	$2,251,390	$2,162,390	$2,069,090
Supplemental Pipeline & Intake	$1,136,000										
Initial Debt Service Payment		$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600
Initial Debt Service Interest		$54,000	$52,800	$51,600	$50,300	$48,900	$47,500	$46,100	$44,500	$42,900	$41,200
Initial Debt Service Principle		$24,600	$25,800	$27,000	$28,300	$29,700	$31,100	$32,500	$34,100	$35,700	$37,400
Remaining Capital Balance - EOY		$1,111,400	$1,085,600	$1,058,600	$1,030,300	$1,000,600	$969,500	$937,000	$902,900	$867,200	$829,800
Phase 1 Dam Investment	$0										
Dam Debt Service Payment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Interest		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Principle		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Remaining Capital Balance - EOY		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

With Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

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Scenario 5

Table 5
North Central Missouri Regional Water Commission
Projected Debt Expense

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Plant Investment										
Initial Debt Service Payment	$196,000	$196,000	$196,000	$196,000	$196,000	$196,000	$196,000	$196,000	$196,000	$196,000
Initial Debt Service Interest	$98,300	$93,600	$88,800	$83,700	$78,400	$72,800	$66,900	$60,800	$54,400	$47,600
Initial Debt Service Principle	$97,700	$102,300	$107,200	$112,300	$117,600	$123,200	$129,100	$135,200	$141,600	$148,400
Remaining Capital Balance - EOY	$1,971,390	$1,869,090	$1,761,890	$1,649,590	$1,531,990	$1,408,790	$1,279,690	$1,144,490	$1,002,890	$854,490
Supplemental Pipeline & Intake										
Initial Debt Service Payment	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600
Initial Debt Service Interest	$39,400	$37,600	$35,600	$33,600	$31,400	$29,200	$26,800	$24,400	$21,800	$19,100
Initial Debt Service Principle	$39,200	$41,000	$43,000	$45,000	$47,200	$49,400	$51,800	$54,200	$56,800	$59,500
Remaining Capital Balance - EOY	$790,600	$749,600	$706,600	$661,600	$614,400	$565,000	$513,200	$459,000	$402,200	$342,700
Phase 1 Dam Investment										
Dam Debt Service Payment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Interest	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Principle	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Remaining Capital Balance - EOY	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Appendix E
Scenario 5

Table 5
North Central Missouri Regional Water Commission
Projected Debt Expense

Year	2024	2025	2026	2027	2028	Total
Plant Investment						
Initial Debt Service Payment	$196,000	$196,000	$196,000	$196,000	$196,000	$4,900,000
Initial Debt Service Interest	$40,600	$33,200	$25,500	$17,400	$8,900	$2,067,000
Initial Debt Service Principle	$155,400	$162,800	$170,500	$178,600	$187,100	$2,832,600
Remaining Capital Balance - EOY	$699,090	$536,290	$365,790	$187,190	$90	
Supplemental Pipeline & Intake						
Initial Debt Service Payment	$78,600	$78,600	$78,600	$78,600	$78,600	$1,965,000
Initial Debt Service Interest	$16,300	$13,300	$10,200	$7,000	$3,600	$829,100
Initial Debt Service Principle	$62,300	$65,300	$68,400	$71,600	$75,000	$1,135,900
Remaining Capital Balance - EOY	$280,400	$215,100	$146,700	$75,100	$100	
Phase 1 Dam Investment						
Dam Debt Service Payment	$0	$0	$0	$0	$0	$0
Dam Debt Service Interest	$0	$0	$0	$0	$0	$0
Dam Debt Service Principle	$0	$0	$0	$0	$0	$0
Remaining Capital Balance - EOY	$0	$0	$0	$0	$0	

Appendix E
Scenario 5

Table 6
North Central Missouri Regional Water Commission
Projected Water Sales

Type	Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Treated Water	Milan	127.8	128.6	129.5	130.5	131.4	132.3	133.2	134.1	135.1	136.0
	Sullivan County #1	119.7	121.3	122.9	124.5	126.1	127.7	129.4	131.0	132.8	134.5
	Green City	34.3	34.3	34.3	34.3	34.3	34.3	34.3	34.3	34.4	34.4
	Milan Industrial User	132.5	143.1	154.5	166.9	180.3	354.8	529.3	529.3	529.3	529.3
	Other Treated Water Cust.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	179.0	187.9	197.3
Total Treated Water		414.3	427.3	441.2	456.1	472.0	649.1	826.2	1,007.8	1,019.4	1,031.5
Raw Water	PSF	264.6	280.5	297.3	315.2	334.1	354.1	492.8	492.8	492.8	492.8
Total Water		678.9	707.8	738.6	771.3	806.1	1,003.2	1,319.0	1,500.6	1,512.2	1,524.3
Percent Treated Water		61.0%	60.4%	59.7%	59.1%	58.6%	64.7%	62.6%	67.2%	67.4%	67.7%
Percent Raw Water		39.0%	39.6%	40.3%	40.9%	41.4%	35.3%	37.4%	32.8%	32.6%	32.3%

Appendix E
Scenario 5

Table 6
North Central Missouri Regional Water Commission
Projected Water Sales

Type	Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water	Milan	137.0	137.9	138.9	139.9	140.9	141.8	142.8	143.8	144.8	145.9
	Sullivan County #1	136.2	138.0	139.8	141.6	143.4	145.3	147.2	149.1	151.1	153.0
	Green City	34.4	34.4	34.4	34.4	34.4	34.4	34.5	34.5	34.5	34.5
	Milan Industrial User	529.3	529.3	529.3	529.3	529.3	529.3	529.3	529.3	529.3	529.3
	Other Treated Water Cust.	207.2	217.5	228.4	239.8	251.8	264.4	277.6	291.5	306.1	321.4
Total Treated Water		1,044.1	1,057.2	1,070.8	1,085.0	1,099.8	1,115.3	1,131.5	1,148.2	1,165.8	1,184.0
Raw Water	PSF	492.8	492.8	492.8	492.8	492.8	492.8	492.8	492.8	492.8	492.8
Total Water		1,536.9	1,550.0	1,563.6	1,577.8	1,592.6	1,608.1	1,624.3	1,641.0	1,658.6	1,676.8
Percent Treated Water		67.9%	68.2%	68.5%	68.8%	69.1%	69.4%	69.7%	70.0%	70.3%	70.6%
Percent Raw Water		32.1%	31.8%	31.5%	31.2%	30.9%	30.6%	30.3%	30.0%	29.7%	29.4%

Appendix E
Scenario 5

Table 6
North Central Missouri Regional Water Commission
Projected Water Sales

Type	Year	2024	2025	2026	2027	2028
Treated Water	Milan	146.9	147.9	148.9	150.0	151.0
	Sullivan County #1	155.0	157.0	159.1	161.1	163.2
	Green City	34.5	34.5	34.5	34.5	34.5
	Milan Industrial User	529.3	529.3	529.3	529.3	529.3
	Other Treated Water Cust.	337.5	354.3	372.1	390.7	410.2
Total Treated Water		1,203.1	1,223.0	1,243.8	1,265.6	1,288.2
Raw Water	PSF	492.8	492.8	492.8	492.8	492.8
Total Water		1,695.9	1,715.8	1,736.6	1,758.4	1,781.0
Percent Treated Water		70.9%	71.3%	71.6%	72.0%	72.3%
Percent Raw Water		29.1%	28.7%	28.4%	28.0%	27.7%

With Milan Industrial User, With 30% Plant Grant
No Phase 1 & 2 Capital

APPENDIX F
SCENARIO 6 – WITH MILAN INDUSTRIAL USER, WITH 50% PLANT GRANT

Appendix F
Scenario 6

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Treated Water O&M Cost Including Return	$482,700	$499,600	$517,500	$536,300	$556,300	$599,800	$685,300	$791,000	$814,000	$837,900
Treated Water Debt Service	$188,000	$187,500	$187,000	$186,500	$186,000	$190,900	$189,200	$192,800	$193,000	$193,200
Total Treated Water Costs	$670,700	$687,100	$704,500	$722,800	$742,300	$790,700	$874,500	$983,800	$1,007,000	$1,031,100
Treated Water Cost ($/1000 gallons)	$1.6190	$1.6079	$1.5966	$1.5847	$1.5727	$1.2182	$1.0585	$0.9762	$0.9878	$0.9996
Raw Water Cost O&M Cost Including Return	$107,200	$113,100	$119,300	$125,800	$132,600	$82,600	$93,000	$86,800	$89,000	$91,300
Raw Water Debt Service	$30,600	$31,100	$31,600	$32,100	$32,600	$27,700	$29,400	$25,800	$25,600	$25,400
Total Raw Water Costs	$137,800	$144,200	$150,900	$157,900	$165,200	$110,300	$122,400	$112,600	$114,600	$116,700
Raw Water Cost ($/1000 gallons)	$0.5207	$0.5141	$0.5075	$0.5010	$0.4945	$0.3115	$0.2484	$0.2285	$0.2325	$0.2368

Year 1 - 5 Average Water Cost	$/1000 gal
Treated Water Costs	$1.5962
Raw Water Costs	$0.5076

Year 6 - 10 Average Water Cost	$/1000 gal
Treated Water Costs	$1.0481
Raw Water Costs	$0.2515

With Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix F
Scenario 6

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water O&M Cost Including Return	$862,700	$888,700	$915,900	$944,200	$973,800	$1,004,900	$1,037,100	$1,071,100	$1,106,500	$1,143,300
Treated Water Debt Service	$193,400	$193,600	$193,800	$194,100	$194,300	$194,500	$194,800	$195,000	$195,200	$195,500
Total Treated Water Costs	$1,056,100	$1,082,300	$1,109,700	$1,138,300	$1,168,100	$1,199,400	$1,231,900	$1,266,100	$1,301,700	$1,338,800
Treated Water Cost ($/1000 gallons)	$1.0115	$1.0238	$1.0363	$1.0491	$1.0621	$1.0754	$1.0888	$1.1026	$1.1166	$1.1307
Raw Water Cost O&M Cost Including Return	$93,600	$96,000	$98,400	$100,900	$103,400	$106,000	$108,700	$111,400	$114,100	$116,900
Raw Water Debt Service	$25,200	$25,000	$24,800	$24,500	$24,300	$24,100	$23,800	$23,600	$23,400	$23,100
Total Raw Water Costs	$118,800	$121,000	$123,200	$125,400	$127,700	$130,100	$132,500	$135,000	$137,500	$140,000
Raw Water Cost ($/1000 gallons)	$0.2411	$0.2455	$0.2500	$0.2545	$0.2591	$0.2640	$0.2689	$0.2739	$0.2790	$0.2841

Year 11 - 15 Average Water Cost	$/1000 gal
Treated Water Costs	$1.0366
Raw Water Costs	$0.2500

Year 16 - 20 Average Water Cost	$/1000 gal
Treated Water Costs	$1.1028
Raw Water Costs	$0.2740

With Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix F
Scenario 6

Table 1
North Central Missouri Regional Water Commission
Projected Water Costs

	2024	2025	2026	2027	2028
Treated Water O&M Cost Including Return	$1,181,800	$1,221,900	$1,264,200	$1,308,200	$1,354,300
Treated Water Debt Service	$195,800	$196,000	$196,300	$196,600	$196,900
Total Treated Water Costs	$1,377,600	$1,417,900	$1,460,500	$1,504,800	$1,551,200
Treated Water Cost ($/1000 gallons)	$1.1450	$1.1593	$1.1742	$1.1890	$1.2041
Raw Water Cost O&M Cost Including Return	$119,700	$122,600	$125,500	$128,500	$131,500
Raw Water Debt Service	$22,800	$22,600	$22,300	$22,000	$21,700
Total Raw Water Costs	$142,500	$145,200	$147,800	$150,500	$153,200
Raw Water Cost ($/1000 gallons)	$0.2892	$0.2946	$0.2999	$0.3054	$0.3109

Year 21 - 25 Average Water Cost	$/1000 gal
Treated Water Costs	$1.1743
Raw Water Costs	$0.3000

With Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix F
Scenario 6

Table 2
North Central Missouri Regional Water Commission
Inputs and Assumptions

Starting Year	2004

Water Plant Capital

Milan Plant Purchase Capital Requirement	$3,564,500
Milan Plant Purchase Additional Capital	$482,200
Milan Plant Purchase Grant Funding	$2,023,350
Milan Plant Purchase Capital less Grants	$2,023,350

Supplemental Pipeline & Intake Capital Requirement	$1,136,000
Pipeline & Intake Grant Funding	$0
Pipeline & Intake Capital less Grants	$1,136,000

Interest Rate for Debt Financing	4.75%
Term of Project Financing - years	25

Phase 1 Capital

Investment Year	2005
Dam and Reservoir Construction Capital	$0
Dam Construction Grant Funding	$0
Dam Construction Capital less Grants	$0
Interest Rate for Debt Financing	5.00%
Term of Project Financing - years	25

Phase 2 Capital

Investment Year	2020
Dam and Reservoir Construction Capital	$0
Dam Construction Grant Funding	$0
Dam Construction Capital less Grants	$0
Interest Rate for Debt Financing	6.00%
Term of Project Financing - years	25

Plant O&M

Inflation Rate for Labor/Materials	4.0%
Inflation Rate for Energy	2.5%
Energy Unit Cost ($/kWh)	$0.0690
Average Monthly Energy Use (kWh)	55,000
Demand Charge ($/kW)	$206
Average Demand (kW)	8.50
Other Utility Costs (Gas?)	20,000
Plant Labor	$109,100
City Labor Offset (10%)	-$10,900
Routine Maintenance (1% of Plant Capital)	$35,600
Chemical Costs per Thousand Gallons	$0.275
General and Administration Expenses	$125,000
Lake Lease per Thousand Gallons	$0.150
Renewal & Replacement Fund Requirement	$20,000

Dam & Reservoir O&M

Phase 1	$0
Phase 2	$0

Water Usage

Milan Treated Water	0.350	[1]
Sullivan County #1 Treated Water	0.328	[1]
Green City Treated Water	0.094	[1]
Milan Industrial User Treated Water	0.363	[1]
Other Treated Water Customers (Begin 2011)	0.490	
PSF Raw Water	0.725	[1]
Milan Water Usage Growth	0.70%	
Sullivan County #1 Water Usage Growth	1.30%	
Green City Water Usage Growth	0.25%	
Raw Water Usage Growth (first 10 years)	6.00%	
Raw Water Usage Growth (after 2010)	0.00%	
Milan Industrial User Water Usage Growth	8.00%	
Milan Industrial User Water Usage Growth (after 2010)	0.00%	
Other Treated Water Growth	5.00%	

Return

Return (% of O&M expense, Years 1-5)	5%
Return (% of O&M expense, Years10 and beyond)	10%

[1] 2002 Average MGD

Appendix F
Scenario 6

Table 3
North Central Missouri Regional Water Commission
Forecast of Operation and Maintenance Expenses

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Treated Water Flow (MGY)	414	427	441	456	472	649	826	1,008	1,019	1,032
Raw Water Flow (MGY)	265	281	297	315	334	354	493	493	493	493
Total Water Flow (MGY)	679	708	739	771	806	1,003	1,319	1,501	1,512	1,524
Plant O&M Expenses										
Labor & Burden	$98,200	$102,100	$106,200	$110,400	$114,800	$119,400	$124,200	$129,200	$134,400	$139,800
General & Administrative	$125,000	$130,000	$135,200	$140,600	$146,200	$152,000	$158,100	$164,400	$171,000	$177,800
Electricity Costs	$47,300	$49,900	$52,900	$56,000	$59,400	$82,900	$107,700	$134,200	$139,100	$144,300
Other Utility Costs	$20,000	$20,800	$21,600	$22,500	$23,400	$24,300	$25,300	$26,300	$27,400	$28,500
Routine Maintenance	$35,600	$37,000	$38,500	$40,000	$41,600	$43,300	$45,000	$46,800	$48,700	$50,600
Chemicals	$113,900	$117,500	$121,300	$125,400	$129,800	$178,500	$227,200	$277,100	$280,300	$283,700
Lake Lease	$101,800	$106,200	$110,800	$115,700	$120,900	$0	$0	$0	$0	$0
R&R Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
Phase 1 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Phase 2 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total O&M Costs	$561,800	$583,500	$606,500	$630,600	$656,100	$620,400	$707,500	$798,000	$820,900	$844,700
Return	$28,100	$29,200	$30,300	$31,500	$32,800	$62,000	$70,800	$79,800	$82,100	$84,500
Total Annual Costs	$589,900	$612,700	$636,800	$662,100	$688,900	$682,400	$778,300	$877,800	$903,000	$929,200
Allocated O&M including Return to Treated Water	$482,700	$499,600	$517,500	$536,300	$556,300	$599,800	$685,300	$791,000	$814,000	$837,900
Allocated O&M including Return to Raw Water	$107,200	$113,100	$119,300	$125,800	$132,600	$82,600	$93,000	$86,800	$89,000	$91,300

With Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix F
Scenario 6

Table 3
North Central Missouri Regional Water Commission
Forecast of Operation and Maintenance Expenses

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water Flow (MGY)	1,044	1,057	1,071	1,085	1,100	1,115	1,131	1,148	1,166	1,184
Raw Water Flow (MGY)	493	493	493	493	493	493	493	493	493	493
Total Water Flow (MGY)	1,537	1,550	1,564	1,578	1,593	1,608	1,624	1,641	1,659	1,677
Plant O&M Expenses										
Labor & Burden	$145,400	$151,200	$157,200	$163,500	$170,000	$176,800	$183,900	$191,300	$199,000	$207,000
General & Administrative	$184,900	$192,300	$200,000	$208,000	$216,300	$225,000	$234,000	$243,400	$253,100	$263,200
Electricity Costs	$149,800	$155,500	$161,500	$167,700	$174,300	$181,300	$188,500	$196,200	$204,200	$212,600
Other Utility Costs	$29,600	$30,800	$32,000	$33,300	$34,600	$36,000	$37,400	$38,900	$40,500	$42,100
Routine Maintenance	$52,600	$54,700	$56,900	$59,200	$61,600	$64,100	$66,700	$69,400	$72,200	$75,100
Chemicals	$287,100	$290,700	$294,500	$298,400	$302,500	$306,700	$311,100	$315,800	$320,600	$325,600
Lake Lease	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
R&R Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
Phase 1 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Phase 2 Dam O&M	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total O&M Costs	$869,400	$895,200	$922,100	$950,100	$979,300	$1,009,900	$1,041,600	$1,075,000	$1,109,600	$1,145,600
Return	$86,900	$89,500	$92,200	$95,000	$97,900	$101,000	$104,200	$107,500	$111,000	$114,600
Total Annual Costs	$956,300	$984,700	$1,014,300	$1,045,100	$1,077,200	$1,110,900	$1,145,800	$1,182,500	$1,220,600	$1,260,200
Allocated O&M Including Return to Treated Water	$862,700	$888,700	$915,900	$944,200	$973,800	$1,004,900	$1,037,100	$1,071,100	$1,106,500	$1,143,300
Allocated O&M Including Return to Raw Water	$93,600	$96,000	$98,400	$100,900	$103,400	$106,000	$108,700	$111,400	$114,100	$116,900

With Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix F
Scenario 6

Table 3
North Central Missouri Regional Water Commission
Forecast of Operation and Maintenance Expenses

Year	2024	2025	2026	2027	2028	Total
Treated Water Flow (MGY)	1,203	1,223	1,244	1,266	1,288	
Raw Water Flow (MGY)	493	493	493	493	493	
Total Water Flow (MGY)	1,696	1,716	1,737	1,758	1,781	
Plant O&M Expenses						
Labor & Burden	$215,300	$223,900	$232,900	$242,200	$251,900	$4,090,200
General & Administrative	$273,700	$284,600	$296,000	$307,800	$320,100	$5,202,700
Electricity Costs	$221,400	$230,700	$240,600	$251,000	$261,800	$3,870,800
Other Utility Costs	$43,800	$45,600	$47,400	$49,300	$51,300	$832,700
Routine Maintenance	$78,100	$81,200	$84,400	$87,800	$91,300	$1,482,400
Chemicals	$330,900	$336,300	$342,100	$348,000	$354,300	$6,619,300
Lake Lease	$0	$0	$0	$0	$0	$555,400
R&R Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$500,000
Phase 1 Dam O&M	$0	$0	$0	$0	$0	$0
Phase 2 Dam O&M	$0	$0	$0	$0	$0	$0
Total O&M Costs	$1,183,200	$1,222,300	$1,263,400	$1,306,100	$1,350,700	$23,153,500
Return	$118,300	$122,200	$126,300	$130,600	$135,100	$2,163,400
Total Annual Costs	$1,301,500	$1,344,500	$1,389,700	$1,436,700	$1,485,800	$25,316,900
Allocated O&M including Return to Treated Water	$1,181,800	$1,221,900	$1,264,200	$1,308,200	$1,354,300	$22,599,000
Allocated O&M including Return to Raw Water	$119,700	$122,600	$125,500	$128,500	$131,500	$2,717,900

With Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix F
Scenario 6

Table 4
North Central Missouri Regional Water Commission
Forecast Energy Expenses

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Energy Unit Cost ($/kWh)	$0.0690	0.0707	0.0725	0.0743	0.0762	0.0781	0.0800	0.0820	0.0841	0.0862
Annual Energy Usage (kWh)	660,000	680,800	703,000	726,700	752,000	1,034,100	1,316,300	1,605,600	1,624,200	1,643,400
Annual Energy Cost	$45,500	$48,100	$51,000	$54,000	$57,300	$80,700	$105,300	$131,700	$136,500	$141,600
Monthly Demand Charge ($KW)	$206.00	211.15	216.43	221.84	227.39	233.07	238.90	244.87	250.99	257.27
Monthly Peak Demand	8.50	8.71	8.93	9.15	9.38	9.62	9.86	10.10	10.36	10.62
Annual Demand Cost	$1,800	$1,800	$1,900	$2,000	$2,100	$2,200	$2,400	$2,500	$2,600	$2,700
Treated Water Electric Cost	$47,300	$49,900	$52,900	$56,000	$59,400	$82,900	$107,700	$134,200	$139,100	$144,300
Raw Water Electric Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Calculated Electric Cost	$47,300	$49,900	$52,900	$56,000	$59,400	$82,900	$107,700	$134,200	$139,100	$144,300
Total Electric Cost	$47,300	$49,900	$52,900	$56,000	$59,400	$82,900	$107,700	$134,200	$139,100	$144,300
Allocated Treated Water	$47,300	$49,900	$52,900	$56,000	$59,400	$82,900	$107,700	$134,200	$139,100	$144,300
Allocated Raw Water	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Appendix F
Scenario 6

Table 4
North Central Missouri Regional Water Commission
Forecast Energy Expenses

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Energy Unit Cost ($/kWh)	0.0883	0.0905	0.0928	0.0951	0.0975	0.0999	0.1024	0.1050	0.1076	0.1103
Annual Energy Usage (kWh)	1,663,400	1,684,300	1,706,000	1,728,600	1,752,200	1,776,800	1,802,600	1,829,400	1,857,300	1,886,400
Annual Energy Cost	$146,900	$152,500	$158,300	$164,400	$170,800	$177,600	$184,600	$192,100	$199,900	$208,100
Monthly Demand Charge ($KW)	263.70	270.29	277.05	283.97	291.07	298.35	305.81	313.45	321.29	329.32
Monthly Peak Demand	10.88	11.15	11.43	11.72	12.01	12.31	12.62	12.93	13.26	13.59
Annual Demand Cost	$2,900	$3,000	$3,200	$3,300	$3,500	$3,700	$3,900	$4,100	$4,300	$4,500
Treated Water Electric Cost	$149,800	$155,500	$161,500	$167,700	$174,300	$181,300	$188,500	$196,200	$204,200	$212,600
Raw Water Electric Cost	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Calculated Electric Cost	$149,800	$155,500	$161,500	$167,700	$174,300	$181,300	$188,500	$196,200	$204,200	$212,600
Total Electric Cost	$149,800	$155,500	$161,500	$167,700	$174,300	$181,300	$188,500	$196,200	$204,200	$212,600
Allocated Treated Water	$149,800	$155,500	$161,500	$167,700	$174,300	$181,300	$188,500	$196,200	$204,200	$212,600
Allocated Raw Water	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Appendix F
Scenario 6

Table 4
North Central Missouri Regional Water Commission
Forecast Energy Expenses

Year	2024	2025	2026	2027	2028
Energy Unit Cost ($/kWh)	0.1131	0.1159	0.1188	0.1218	0.1248
Annual Energy Usage (kWh)	1,916,800	1,948,500	1,981,600	2,016,200	2,052,300
Annual Energy Cost	$216,700	$225,800	$235,400	$245,500	$256,100
Monthly Demand Charge ($KW)	337.55	345.99	354.64	363.51	372.60
Monthly Peak Demand	13.93	14.28	14.63	15.00	15.37
Annual Demand Cost	$4,700	$4,900	$5,200	$5,500	$5,700
Treated Water Electric Cost	$221,400	$230,700	$240,600	$251,000	$261,800
Raw Water Electric Cost	$0	$0	$0	$0	$0
Calculated Electric Cost	$221,400	$230,700	$240,600	$251,000	$261,800
Total Electric Cost	$221,400	$230,700	$240,600	$251,000	$261,800
Allocated Treated Water	$221,400	$230,700	$240,600	$251,000	$261,800
Allocated Raw Water	$0	$0	$0	$0	$0

With Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix F
Scenario 6

Table 5
North Central Missouri Regional Water Commission
Projected Debt Expense

Year	Investment	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Plant Investment	$2,023,350										
Initial Debt Service Payment		$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000
Initial Debt Service Interest		$96,100	$94,000	$91,800	$89,600	$87,200	$84,700	$82,000	$79,300	$76,400	$73,400
Initial Debt Service Principle		$43,900	$46,000	$48,100	$50,400	$52,800	$55,300	$58,000	$60,700	$63,600	$66,600
Remaining Capital Balance - EOY		$1,979,450	$1,933,450	$1,885,350	$1,834,950	$1,782,150	$1,726,850	$1,668,850	$1,608,150	$1,544,550	$1,477,950
Supplemental Pipeline & Intake	$1,136,000										
Initial Debt Service Payment		$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600
Initial Debt Service Interest		$54,000	$52,800	$51,600	$50,300	$48,900	$47,500	$46,100	$44,500	$42,900	$41,200
Initial Debt Service Principle		$24,600	$25,800	$27,000	$28,300	$29,700	$31,100	$32,500	$34,100	$35,700	$37,400
Remaining Capital Balance - EOY		$1,111,400	$1,085,600	$1,058,600	$1,030,300	$1,000,600	$969,500	$937,000	$902,900	$867,200	$829,800
Phase 1 Dam Investment	$0										
Dam Debt Service Payment		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Interest		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Principle		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Remaining Capital Balance - EOY		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

With Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix F
Scenario 6

Table 5
North Central Missouri Regional Water Commission
Projected Debt Expense

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Plant Investment										
Initial Debt Service Payment	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000
Initial Debt Service Interest	$70,200	$66,900	$63,400	$59,800	$56,000	$52,000	$47,800	$43,400	$38,800	$34,000
Initial Debt Service Principle	$69,800	$73,100	$76,600	$80,200	$84,000	$88,000	$92,200	$96,600	$101,200	$106,000
Remaining Capital Balance - EOY	$1,408,150	$1,335,050	$1,258,450	$1,178,250	$1,094,250	$1,006,250	$914,050	$817,450	$716,250	$610,250
Supplemental Pipeline & Intake										
Initial Debt Service Payment	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600	$78,600
Initial Debt Service Interest	$39,400	$37,600	$35,600	$33,600	$31,400	$29,200	$26,800	$24,400	$21,800	$19,100
Initial Debt Service Principle	$39,200	$41,000	$43,000	$45,000	$47,200	$49,400	$51,800	$54,200	$56,800	$59,500
Remaining Capital Balance - EOY	$790,600	$749,600	$706,600	$661,600	$614,400	$565,000	$513,200	$459,000	$402,200	$342,700
Phase 1 Dam Investment										
Dam Debt Service Payment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Interest	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dam Debt Service Principle	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Remaining Capital Balance - EOY	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

With Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix F
Scenario 6

Table 5
North Central Missouri Regional Water Commission
Projected Debt Expense

Year	2024	2025	2026	2027	2028	Total
Plant Investment						
Initial Debt Service Payment	$140,000	$140,000	$140,000	$140,000	$140,000	$3,500,000
Initial Debt Service Interest	$29,000	$23,700	$18,200	$12,400	$6,300	$1,476,400
Initial Debt Service Principle	$111,000	$116,300	$121,800	$127,600	$133,600	$2,023,400
Remaining Capital Balance - EOY	$499,250	$382,950	$261,150	$133,550	-$50	
Supplemental Pipeline & Intake						
Initial Debt Service Payment	$78,600	$78,600	$78,600	$78,600	$78,600	$1,965,000
Initial Debt Service Interest	$16,300	$13,300	$10,200	$7,000	$3,600	$829,100
Initial Debt Service Principle	$62,300	$65,300	$68,400	$71,600	$75,000	$1,135,900
Remaining Capital Balance - EOY	$280,400	$215,100	$146,700	$75,100	$100	
Phase 1 Dam Investment						
Dam Debt Service Payment	$0	$0	$0	$0	$0	$0
Dam Debt Service Interest	$0	$0	$0	$0	$0	$0
Dam Debt Service Principle	$0	$0	$0	$0	$0	$0
Remaining Capital Balance - EOY	$0	$0	$0	$0	$0	

With Milan Industrial User, With 50% Plant Grant
No Phase 1 & 2 Capital

Appendix F
Scenario 6

Table 6
North Central Missouri Regional Water Commission
Projected Water Sales

Type	Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Treated Water	Milan	127.8	128.6	129.5	130.5	131.4	132.3	133.2	134.1	135.1	136.0
	Sullivan County #1	119.7	121.3	122.9	124.5	126.1	127.7	129.4	131.0	132.8	134.5
	Green City	34.3	34.3	34.3	34.3	34.3	34.3	34.3	34.3	34.4	34.4
	Milan Industrial User	132.5	143.1	154.5	166.9	180.3	354.8	529.3	529.3	529.3	529.3
	Other Treated Water Cust.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	179.0	187.9	197.3
Total Treated Water		414.3	427.3	441.2	456.1	472.0	649.1	826.2	1,007.8	1,019.4	1,031.5
Raw Water	PSF	264.6	280.5	297.3	315.2	334.1	354.1	492.8	492.8	492.8	492.8
Total Water		678.9	707.8	738.6	771.3	806.1	1,003.2	1,319.0	1,500.6	1,512.2	1,524.3
Percent Treated Water		61.0%	60.4%	59.7%	59.1%	58.6%	64.7%	62.6%	67.2%	67.4%	67.7%
Percent Raw Water		39.0%	39.6%	40.3%	40.9%	41.4%	35.3%	37.4%	32.8%	32.6%	32.3%

Appendix F
Scenario 6

Table 6
North Central Missouri Regional Water Commission
Projected Water Sales

Type	Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Treated Water	Milan	137.0	137.9	138.9	139.9	140.9	141.8	142.8	143.8	144.8	145.9
	Sullivan County #1	136.2	138.0	139.8	141.6	143.4	145.3	147.2	149.1	151.1	153.0
	Green City	34.4	34.4	34.4	34.4	34.4	34.4	34.5	34.5	34.5	34.5
	Milan Industrial User	529.3	529.3	529.3	529.3	529.3	529.3	529.3	529.3	529.3	529.3
	Other Treated Water Cust.	207.2	217.5	228.4	239.8	251.8	264.4	277.6	291.5	306.1	321.4
Total Treated Water		1,044.1	1,057.2	1,070.8	1,085.0	1,099.8	1,115.3	1,131.5	1,148.2	1,165.8	1,184.0
Raw Water	PSF	492.8	492.8	492.8	492.8	492.8	492.8	492.8	492.8	492.8	492.8
Total Water		1,536.9	1,550.0	1,563.6	1,577.8	1,592.6	1,608.1	1,624.3	1,641.0	1,658.6	1,676.8
Percent Treated Water		67.9%	68.2%	68.5%	68.8%	69.1%	69.4%	69.7%	70.0%	70.3%	70.6%
Percent Raw Water		32.1%	31.8%	31.5%	31.2%	30.9%	30.6%	30.3%	30.0%	29.7%	29.4%

Appendix F
Scenario 6

Table 6
North Central Missouri Regional Water Commission
Projected Water Sales

Type	Year	2024	2025	2026	2027	2028
Treated Water	Milan	146.9	147.9	148.9	150.0	151.0
	Sullivan County #1	155.0	157.0	159.1	161.1	163.2
	Green City	34.5	34.5	34.5	34.5	34.5
	Milan Industrial User	529.3	529.3	529.3	529.3	529.3
	Other Treated Water Cust.	337.5	354.3	372.1	390.7	410.2
Total Treated Water		1,203.1	1,223.0	1,243.8	1,265.6	1,288.2
Raw Water	PSF	492.8	492.8	492.8	492.8	492.8
Total Water		1,695.9	1,715.8	1,736.6	1,758.4	1,781.0
Percent Treated Water		70.9%	71.3%	71.6%	72.0%	72.3%
Percent Raw Water		29.1%	28.7%	28.4%	28.0%	27.7%